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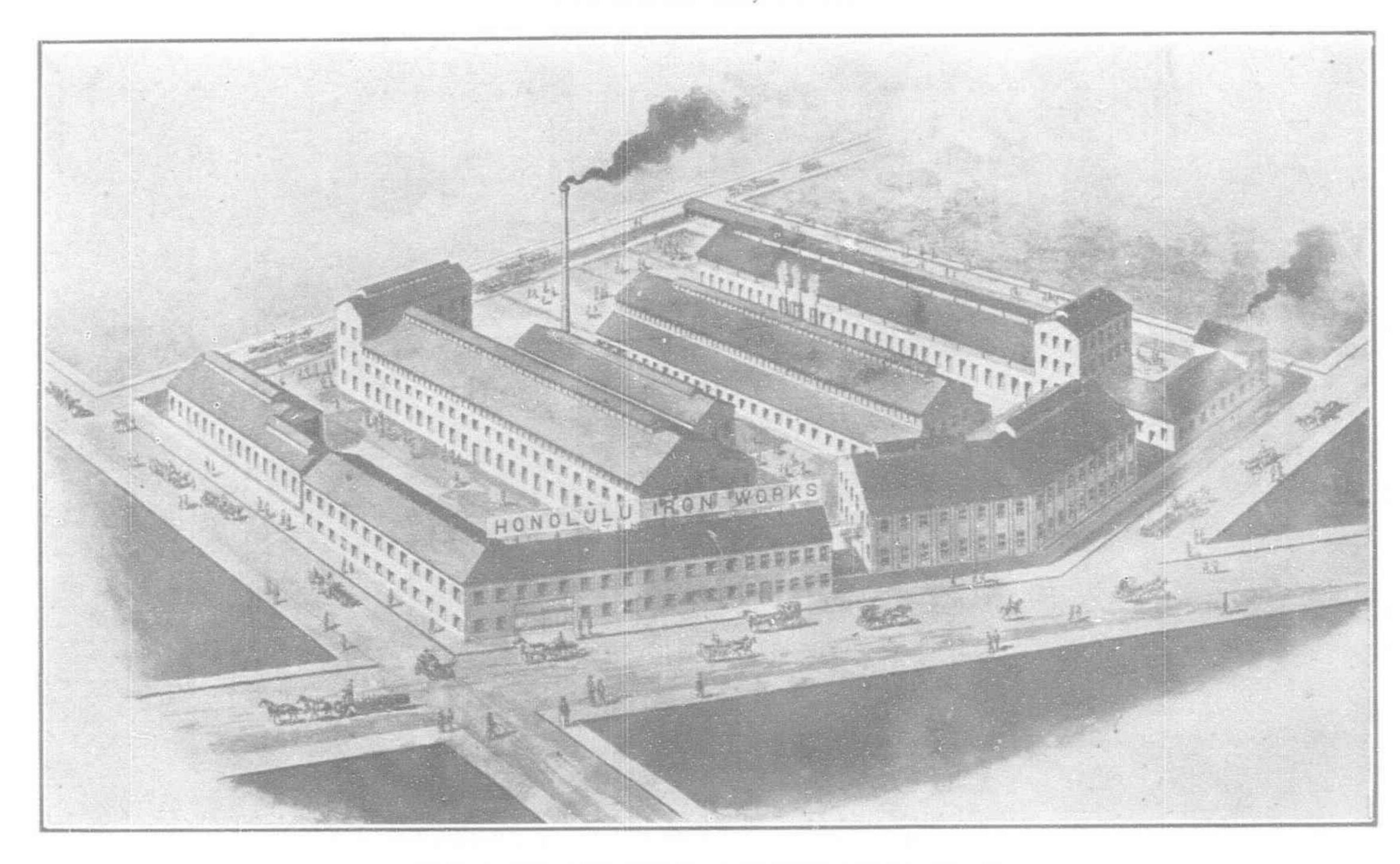
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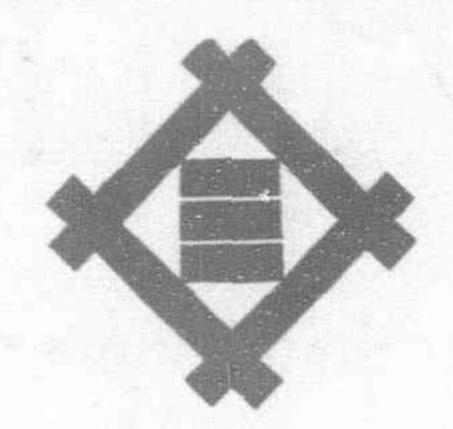
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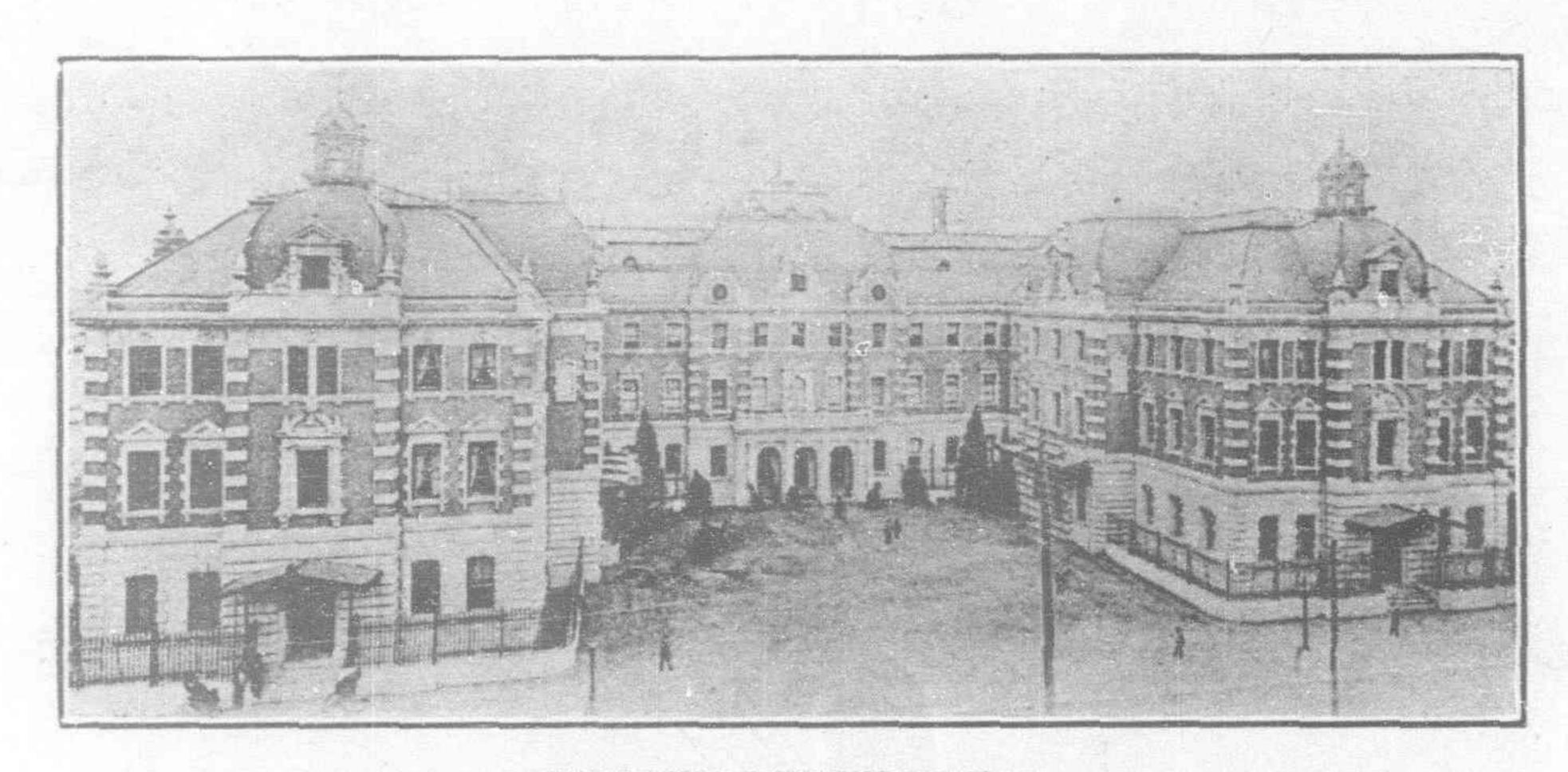
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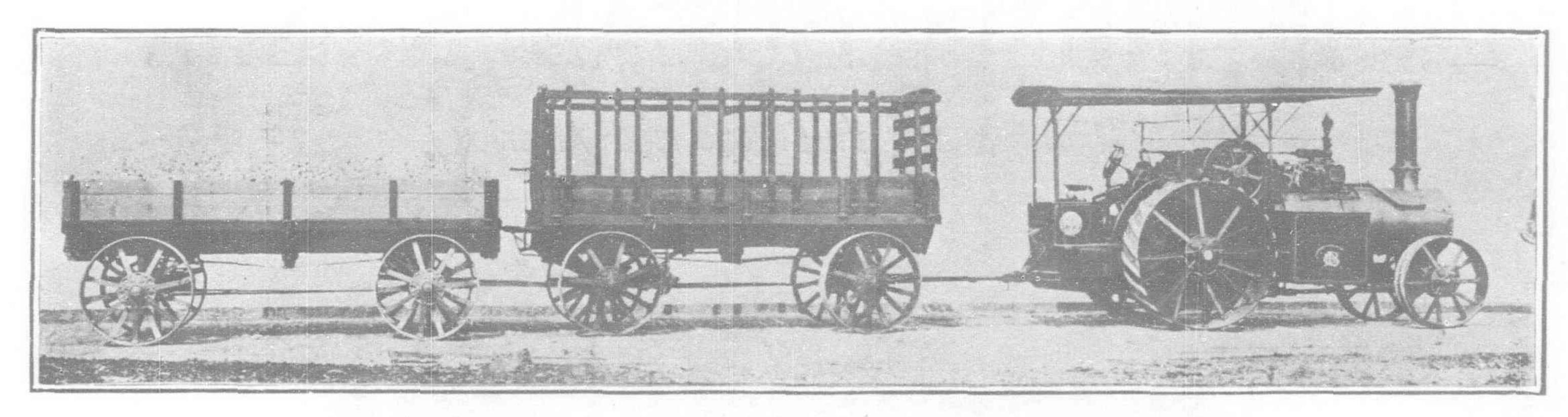
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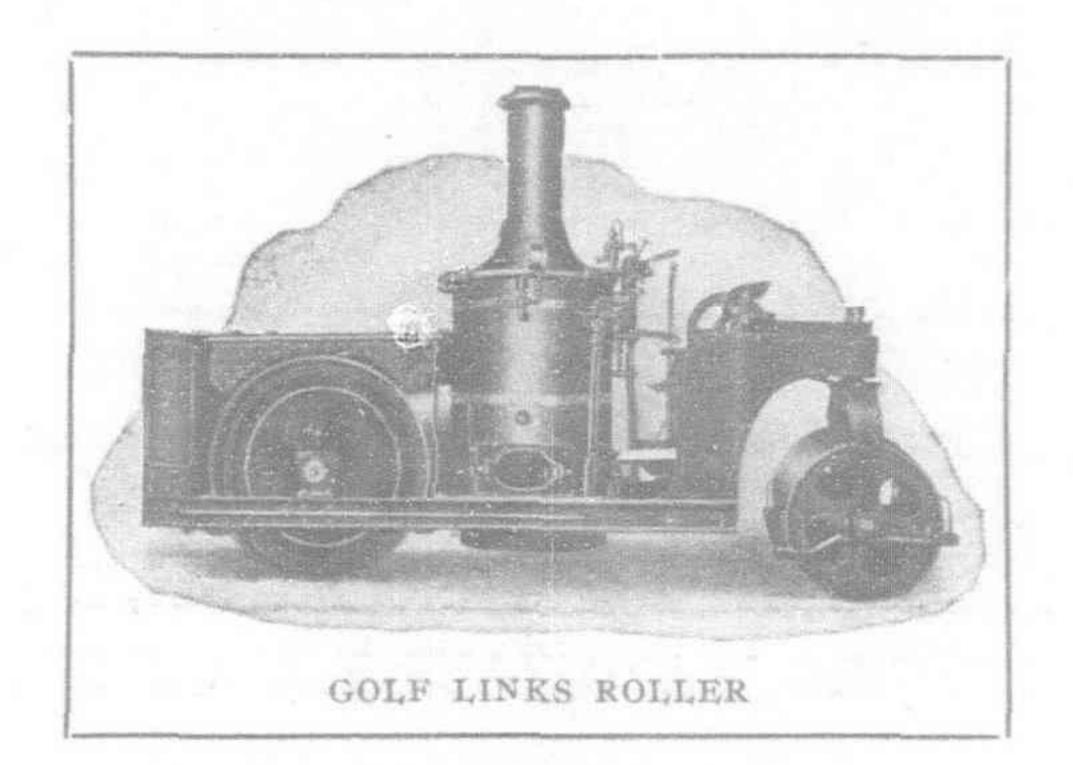
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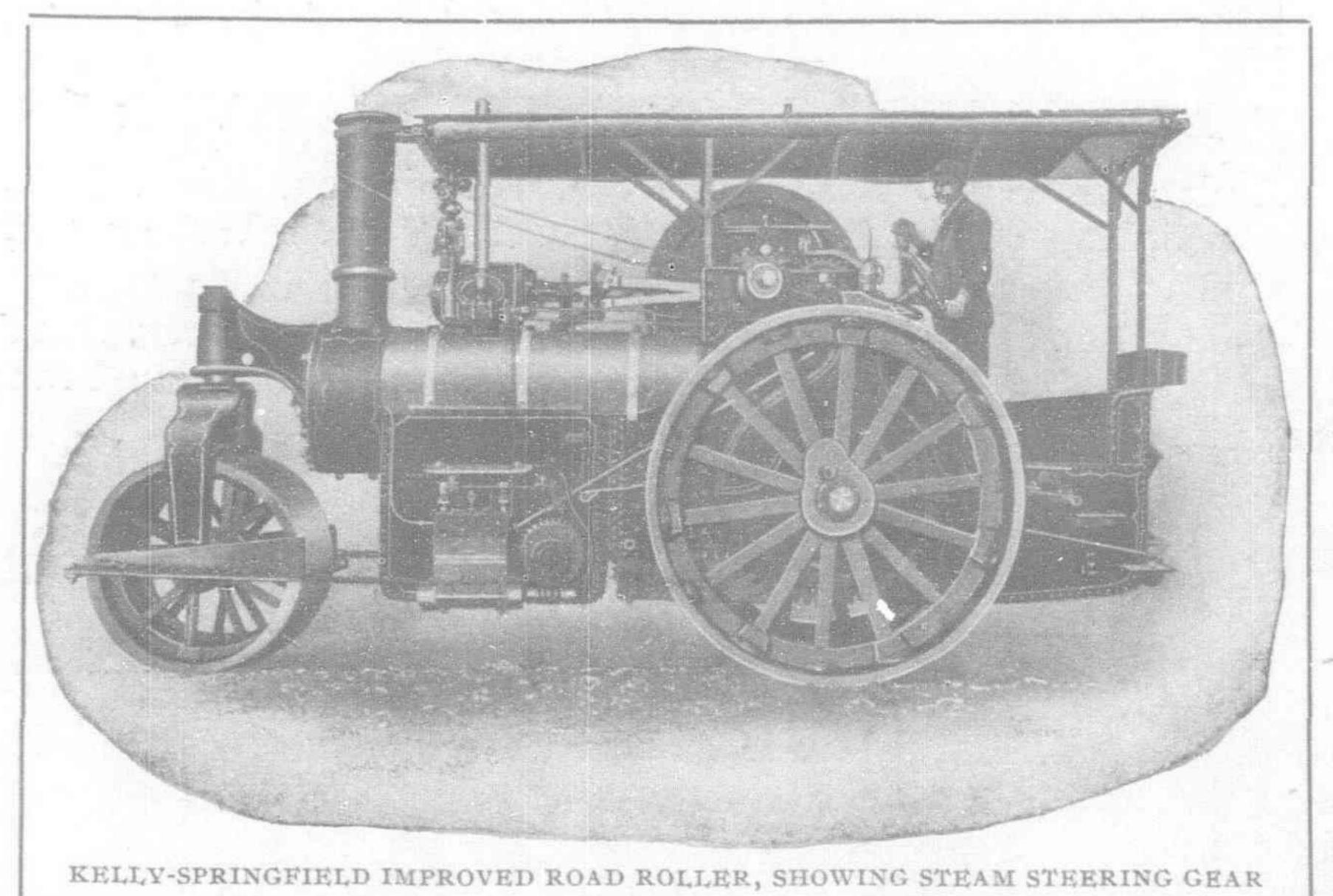
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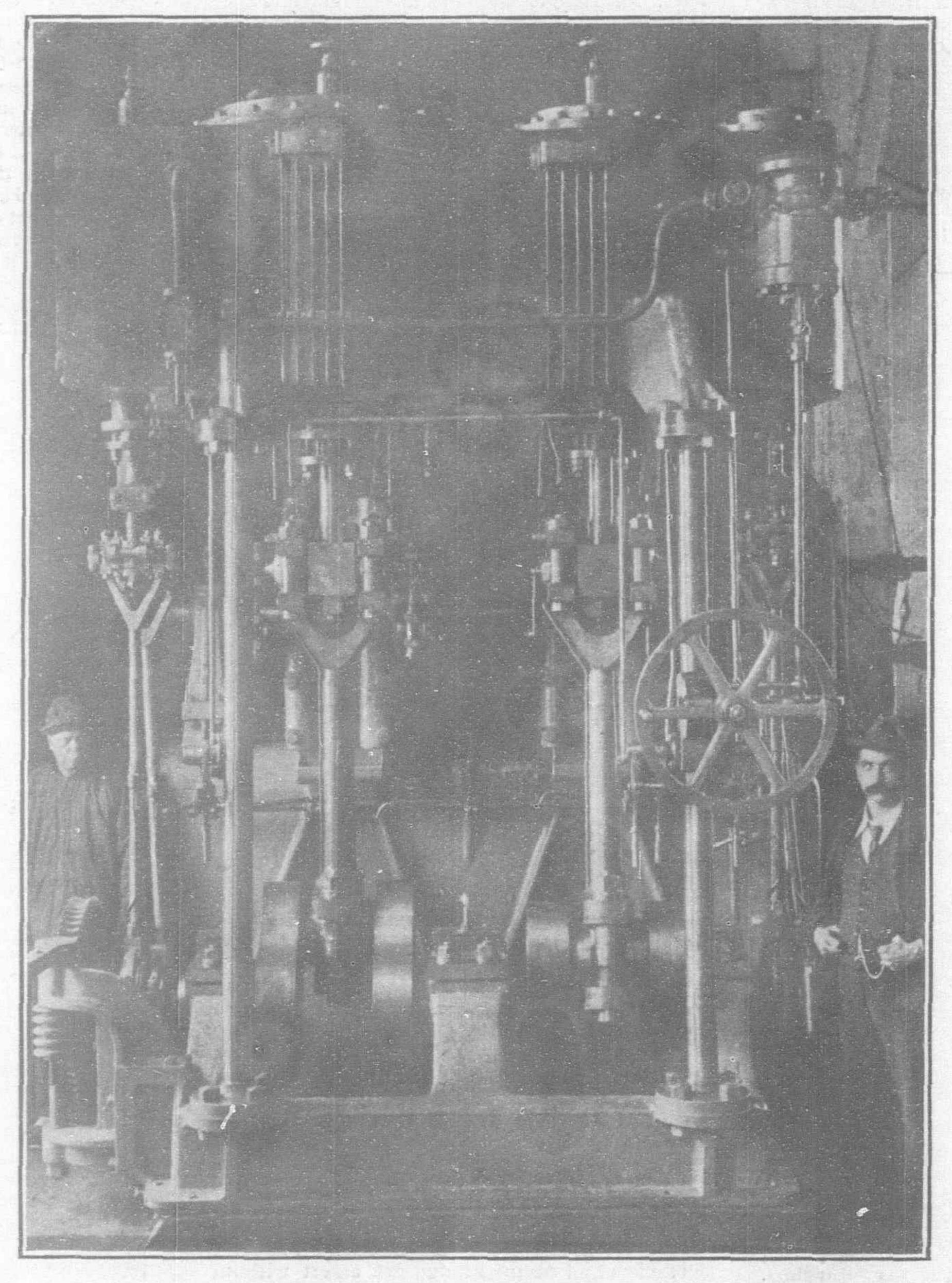
EASTERN REVIEW

MERCE @ ENGINEERING @

VOL. I.

MANILA, P. I., SEPTEMBER 1904.

No. 4.



ENGINES OF COAST GUARD STEAMERS, BUILT BY S. C. FARNHAM, BOYD & CO., FOR THE PHILIPPINE GOVERNMENT.

SHIPBUILDING IN THE FAR EAST

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of the company have been steady, and although a decline is noticeable in the last dividend declared, it is due largely to the general fall-ing off in business caused by the war in the north. The prospects for continued prosper-(Continued on page 7.)

FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

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A MONTHLY REVIEW OF FAR EASTERN TRADE, FINANCE, AND ENGINEERING. DEDICATED TO THE INDUSTRIAL DEVELOPMENT AND ADVANCE-MENT OF TRADE IN THE PHILIPPINES AND FAR EASTERN COUNTRIES.

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MANILA, SEPTEMBER, 1904

PLAIN TALK

As a preface to our remarks, we reproduce from two of the leading English papers of the East the following editorials:

(From The Englishman, Calcutta, August 4th, 1904.)

A Manila paper is alarmed at the thought that the American occupation of the Philippines will come to nothing, through the obvious disinclination of Americans to settle there. Already the departures exceed the arrivals and the increase of deaths over births among the residents is very marked. If this dwindling of the American population continues the American possession of the islands will exist in name only. At the beginning Americans were eager to go to the Philippines. But it was quickly realized that the trade of the islands was in other hands, the climate was bad, and that even big salaries could not withstand the high demands of house-rent and living. Americans are home-loving, and as soon as they realize that a fortune is not to be made out of their exile they leave the country. It has been rumored that Japan has a keen desire to possess the Philippines. and the disinclination of Americans to settle there may decide the United States Government to come to terms. From the beginning the American essay at colonizing in the Pacific has been unfortunate, and there is a strong section of the public opposed to the experiment being proceeded with.

(From the Hongkong Daily Press, 22nd August.)

PHILIPPINE TRADE DESPONDENT.

Our dear neighbors, the American colonists of the Philippines, would appear (if their local journals afford any criteria to judge by) to be somewhat discouraged by the results of their efforts in those tropical islands. The Manila newspapers, which customarily seem about as antipathetic, each to other, as the most repellent of the atoms, agree in bewailing the general condition of Philippine prosperity. They have written that trade has gone from bad to worse; that the most that can be done is to scrape a precarious living from the platter of business; and they have published warnings meant to undeceive such of their fellow countrymen in the States as might be under the impression that the U.S. insular colony

is another El Dorado. One of the last papers to hand by Saturday's mail reports that a large number of civilians had just left Manila, "returning to the Home-land with the expressed intention of remaining there." They were men who "had failed dismally in the race for commercial prosperity;" who "had battled bravely against an untoward fate, and had only surrendered when success seemed impossible of attainment." We are told they "left the Philippines sorrowfully, with deep regret for the necessity of seeking other fields of usefulness." There is an ever-pressing temptation to exaggeration in the case of journalists who have to bring before their readers a picture of the state of things as they are, either good or bad; and we are afraid we cannot describe our Manila contemporaries as immune thereto. The tone of the business man who is dissatisfied with his progress, even though he has to admit some progress, is proverbially pessimistic. His complainings, caught by the newspaper man and by him reechoed, are apt to lose in conscientions accuracy what they undoubtedly gain in expressiveness and force. American enterprise on this side of the Pacific is young yet. It seems to us full early to let it go forth that there is an actual "necessity of seeking other fields of usefulness." Indeed, it would not be a rash assertion if we ventured to suggest that the list of arrivals at Manila is probably as lengthy as the list of departures. Those who are described as having "failed dismally" were perhaps victims of that racial fever which has been characteristically summarized by Uncle Sam's citizens themselves as the "get rich-quick itch." No doubt in the early days, before the "old resident" species-rare as it is in the Philippines-had had time to evolve, returns were quicker and profits on a more generous scale. Similar beginnings and like dwindlings have been noticed in China. There is, of course, a big difference between our methods in this colony, and in the various Chinese settlements, and the American methods of treating the indigenous community in theirs; and we must be pardoned for preferring our own. It is not yet five years ago since the ports of Luzon were thrown open to trade. None of our merchant princes expected or managed to get rich so quickly as these despondent and departing men of Manila. It is, moreover, a fact by no means hostile to our argument that there should be so many British firms, some old e-tablished in the Philippines, none of whom seem to have recognized "the necessity of seeking other fields of usefulness." Also, despite a corrective comment directed at us recently by one of our sprightly contemporaries, we are still unable to read into the trade statistics of the last three years any proof that things insular are so bad as they are made out to be. A continuance of railway enterprise, with as cheap freights as can possibly be arranged, ought to make the outlook very much brighter for our neighbors. We have already hinted at the virtue of a little patience."

The policy of the FAR EASTERN REVIEW is averse to newspaper controversies, or indulgence in editorial criticism of its contemporaries, but as the evil is of long standing, and a constant menace to the commercial development of the islands, and the sole factor in placing Americans in ridicule and contempt throughout the Far East, we are compelled to express our views on the subject.

The government officials and commercial element of Manila, absorbed in their difficult task of bettering conditions, have little or no opportunity of realizing how their efforts are being received by our neighbors. Very few foreign newspapers reach Manila, and the few that are received are read solely by the mercantile subscribers. Thus any friendly or adverse comment on our progress fails to reach those

most vitally interested. During our short journalistic career in Manila, extending over a period of nine months, we have kept in touch with all the newspapers published in the East, from Yokohama around to Calcutta, and despite the local contention that our foreign contemporaries are "anti-American," prejudiced, and anxious to see the United States fail in its mission, we frankly confess to have seen little of such a feeling. We have carefully traced back all adverse criticism and comment, and can assert without fear of contradiction that invariably the basis for the so-called "anti-American" articles have been inspired by the asinine drivel and "rot" emanating from some local American paper.

The two introductory editorials are fair examples. One paper takes the matter at its worth, and comments accordingly; the other, nearer to home, and with better opportunities for knowing the exact state of affairs, administers a well-merited rebuke. It is indeed a sad commentary on "American journalism" as practiced in Manila, that an English contemporary in Hongkong should feel itself justified in defending the cause of American progress in the Philippines.

Our government as represented by the Philippine Commission has a stupendous task ahead of it to develop the Islands and place them on a prosperous basis. The work of pacification vestige of organized opposition has long since disappeared. Political questions have been solved and a state of complete harmony is rapidly developing between all elements. The work of education and moral uplifting of the native has progressed with satisfaction, and the one remaining task for the government is to reconstruct the industries and exploit the undeveloped possibilities of the islands. All their energies are now being devoted to this end. Public works of great magnitude are being planned and provided for as the demands upon the finances permit.

Much has already been accomplished, but we are only at the commencement. It is too early to forecast failure. There can be no such a thing as failure. It is not in the American "makeup" to fail. We are here, and here to stay, and it behooves every true American to put his shoulder to the wheel and help to push, instead of being a drag and impediment. We need good, strong, virile, strenuous, optimistic Americans out here in the Philippines. It is not enough that they are Americans in the Homeland. Here on the outpost of our frontiers, in direct contact with all the competing nations of the earth, he must be three times an American and endowed with all the sterling qualities of the race. The weakling, degenerate, pessimistic, anti-imperialistic type of American has no place here. We do not want him. His place is back in the Homeland, with the rest of the "aunties" and weak sisters. There he can spout and croak to his heart's content, without causing any damage, and we know how to manage him when it becomes necessary. When he carries his campaign into the Islands, and pulls down the structure that his more manly countryman has helped to erect, his conduct draws dangerously near the crime of treason, and the sooner the islands are rid of him the better.

As a matter of fact trade has been dull, but the general tendency has been upward. Many Americans have gone home during the last two months; in fact, the exodus has been above the average, but it is due entirely to the large number of government employees taking advantage of their accrued leave to visit their home and stop at the St. Louis Exhibition. The majority will return. A few disgruntled persons, after spending their salaries in high living, have left disgusted with the Islands. We are well rid of the element. Better men will come and take their places.

To make this the subject of editorial criticism, disparaging to the progress of the Islands and deterring others from coming out here, is to deliberately betray the interests we are called upon to defend.

At a time when every commercial element requires the solid support of the press, when trade conditions are shaky and credit difficult to secure, then comment of the nature reflected in the two editorials causes more harm, creates more damage, and gives rise to more unfavorable reports than can be remedied in a year by the combined energies of the Chambers of Commerce and others interested in the development of the country.

The time has come when a definite stop must be placed on this class of "drivel" emanating from our midst, if we ever expect to make any headway in encouraging new blood and capital to enter the islands.

Perhaps in no other town in the world of its size are there so many diversified interests, all working against each other and repelling every effort made towards a mutual combination of forces. We have here five different Chambers of Commerce, representing different national interests, but above all there is a common interest which must sooner or later be defended, and which calls for a united front.

The press must play its part in supporting this movement and extending the influence and prestige of the government and mercantile world. Frank and justifiable criticism is a prerogative which can not be surrendered, but willful distortion of facts and figures prejudicial to the welfare of a community struggling to gain its feet is ucanlled for, and should not be tolerated.

The remedy lies in the hands of the business people. As long as they support and condone such a breach of good faith, just so long will unfriendly critics have ammunition from our

own camp with which to injure us.

If there is any one cause more than another for the tardy development of trade, look for the trouble "higher up," and place the blame and censure on Congress, who has failed to do its duty to the Islands. Despite its non action and indifference to our welfare, the Islands have progressed, thanks to the sturdy Americanism of its pioneers, and the conservative business methods of the foreign merchants. They have not deserted the Islands, nor is there any prospect of their doing so.

We have an abiding faith in the justice of the American public, and while selfish interests may for a time influence legislation to our detriment, it can not continue always. The trade development of the United States in the Far East demands that we keep the Philippines, and unless we are prepared to tax the home country heavily to favor one or two trusts, then the tariff must be abolished, and a new era of

We have gone into the subject deeper than

our space would otherwise warrant, but when we remember the many similar disparaging comments which have been hurled back at us during the last nine months, we feel that we are justified.

FAR EASTERN SHIPBUILDING

No other engineering industry presents such a bright outlook for extension in the Far East than does the building of ships and steamers. That this fact is appreciated at its full worth is attested to by the various enterprises established in the leading seaports of China and Japan, all of which are conducted on the same lines as the best of similar yards and works back on the Continent or the United States.

It is doubtful if any other section of the world offers more advantages for the development of this industry than the Far East. Railroads as yet are few and far between, and the natural means of transportation is by water. The great length of the coast lines of the large islands, from the Empire of the Rising Sun, on the north, to the innumerable islands of Malaysia, enclosing a population of millions, which have to be supplied to a more or less extent with merchandise from the outside world and with a means of exporting their local products, will always insure a constant and increasing demand for shipping tonnage. All railroad development, projected or under construction in the different parts of the East, only tend to increase this demand, as, without ample and efficient sea transportation, the roads are practically worthless. It is only on the larger islands such as Nippon, Luzon, Borneo, Java, and a few others, where railroad development can be carried out to any great extent. At the best the smaller islands can hope for nothing further, for a long time to come, than a short line from the interior to the main sea port, and for the present all hope of development must be centered on securing sufficient steamship communication with the other centers of trade in the Orient.

This is particularly applicable to the Philippines and Malaysia. The trade of these islands depends entirely upon ample intercourse between the smaller ports and Manila, Singapore, Hongkong, and Batavia, and its natural growth will give a steady demand for the building of small coastwise steamers, harbor tugs, etc.

The Government of the Philippines have still to provide for the construction of many coast guard and revenue cutters, which must be built

in the yards of the East.

The great rivers of China, at present the only outlet for the immense volume of trade from the most densely populated part of the world, are being opened up to foreign commerce, and the resultant increase of traffic with the seaports is a constant guarantee for the shipbuilder's profits. This river traffic is already of great magnitude, and the demand for larger and better steamers to meet the requirements of the business is being met and provided for by the enterprising engineering companies who are increasing their plants

and equipment so as to be able to cope with the construction of any size of steamer for this trade.

We publish in this number a brief description of the works of S. C. Farnham, Boyd & Co., whose yards and docks at Shanghai are fully equipped for this work. At Hongkong is located the similar establishment of the Hongkong & Whampoa Dock Co. The steamship "Shanghai" of 1900 tons burden, for the Yangtsze River trade, was recently launched from these works. Their shops have been equipped with a complete electric power plant and have demonstrated their ability to turn out work which hitherto has been ordered from England. The works of Geo. Fenwick & Co. at the same port are to be enlarged, and a new and more extensive site for the location of the new yards has been purchased. New machinery and appliances will be added, and the firm will be prepared to handle larger contracts than formerly. At Singapore we have the . important works and docks of the Tanjong Pagar Dock Co., who have already commenced the extension of their plant and docking facilities on a large scale. Other firms such as Riley, Hargreave & Co. of Singapore, W. S. Bailey of Hongkong, and the New Shipbuilding works of Shanghai, all testify to the great importance attached to the future of the industry. Nearly all the smaller ports have their local works, such as the Bangkok Dock Co., at Bangkok, the New Amoy Dock Co., at Amoy, and here in Manila, we have three well-equipped shops for constructing the smaller vessels and launches for river and inter-is and trade. The industry has made marked strides in Japan, where more than a dozen firms are engaged profitably in shipbuilding. Prominent among these are the Osaka Iron Works, the Mitsu Bishi Dockyard and Shipbuilding Works at Nagasaki, which we described in the August issue of this paper, the Kawasaki Dockyard Co. at Kobe, Yokohama Dock Co., and the Uraga Dock Co. All of these establishments are constantly at work building steamers to meet the ever increasing demand of Japanese inter-island traffic, and are reaching out and competing with the firms in China for the construction of steamers for the river trade, and the Philippines.

All of the larger companies have demonstrated their ability to build steamers fully as well as many of the older established yards in other countries, and it will only be a question of a very few years, in view of the progress already made, when all steamers intended for the Eastern trade will be constructed in the

East.

"THE MENACE TO THE AMERICAN BEET SUGAR INDUSTRY"

We present in this issue two illustrations, depicting the extremes of cane milling: one as carried on to a large extent in the Philippines, and the other the highest type of modern enginering skill, as employed by the progressive sugar

factories of Hawaii and Cuba.

Making sugar with an old, antiquated mill, turned by two sleepy and sluggish carabaos; feeding the individual cane stalks to the rollers by hand, and boiling it down later in open kettles with direct heat, require no skill, and the product is the same as results from all inexperienced labor. It has a value, probably, sufficient to pay for the cost of labor and capital invested in such an outfit; but to attempt to place such an industry in the same category as one which exemplifies the highest and most advanced scientific thought of this progressive age, is to make the whole subject ridiculous. The object of the comparison is not to decry or belittle the humble efforts of the struggling Filipino sugar planter, but rather as an object lesson to the great and mighty beet sugar magnates, whose roars and bellows about Philippine competition have resounded throughout the United States for the last two years, until the general public and Congress have been led to look on the island industry as a direct menace to the future prosperity and greatness of the United States, and the whole trend of national legislation as "ordered" by Oxnard has been to throttle the industry of the archipelago before it threatens the pockets of the trusts.

When we glance at the puny efforts of the Filipino, and then at the powerful mills of Hawaii and Cuba, the vision of cheap Filipino sugar flooding the markets of the United States, and killing the home industry, fades away into nothing, and in its place there comes a feeling of the utter absurdity of the contentions of Oxnard, Palmer, et al.

True it is, that under a free tariff and the influx of new capital, or the investment of money already here, the sugar industry could be placed on a plane rivalling that of Hawaii or Puerto Rico; but it would be years before the archipelago could produce an annual output equivalent with Hawaii, Puerto Rico, or Louisiana. The possibilities of the industry offer a liberal return on capital, but the field is limited. All lands are not sugar lands, and the wildest dreams of future development do not pass over 500,000 tons. Puerto Rico is limited in its development: 250,000 tons is probably all that the available sugar lands will produce. Louisiana has reached the full extent of her development, consistent with the outlay of capital. The industry there is on the decline.

Hawaii has also developed her resources to the limit. It is doubtful if another 100,000 tons could be profitably added to her present output. The industry there has seen its best days. There remains Cuba with its unlimited capacity for the growing of cane, which could readily supply all the requirements of the American market. By a kind action of Congress, "suffering Cuba" was given an apparent benefit by a treaty of reciprocity—in reality, a donation to the already bulging pockets of the refiners.

And now, because there is a possibility in the future that the industry of the Philippines might develop—mind, there is no contention that it constitutes a menace at present: a glance at the two illustrations will dispel any illusions of that nature—it has been proposed that sugar shall always be subject to duty.

This is merely to protect the future of the home industry, and, according to the sweet-worded and alluring prospectus of the beat sugar combination, to insure the American farmer a profitable crop. Of course, it is the American farmer, the poor downtrodden son of toil, who is to receive the greatest benefits from this altruistic campaign in their favor. The self sacrificing promoters and their satellites are in the field from purely philanthropic motives. They get little or nothing—the farmer is the one they are striving to make happy, and better his lot.

It has never occurred to the dear sons of toil, or to the subservient hayseed Congressmen, that the future of the beet sugar industry in the United States is purely a scheme for the enrichment of a small clique of promoters, headed by Oxnard.

True that companies are formed, factories erected, contracts with farmers entered into, and the manufacture of sugar carried on. But who gets the lion's share of the profits—the company, the farmers, or the promoters? Let us look at their methods and form our

own judgment.

Aided by the work of the Department of Agriculture, who have made soil tests and experiments in all parts of the United States, the promoting syndicates send out experts to all these districts, and initiate a campaign in favor of beet culture. They are careful to enlist the sympathies of the local merchants, storekeepers, and small capitalists, and, after firing their enthusiasm, a company is formed in which the local "lambs" subscribe for the majority of the stock. The promoters receive their share of paid up stock free. In nearly every instance the promoter who has thus gained the confidence of the community also represents some large construction company, and it naturally follows that the supervision of the work and the contract for the erection of buildings and machinery, agricultural supplies, etc., amounting to at least \$500,000, is placed in their hands.

After work is commenced and prospects are bright for a good crop, the stock is inflated, the promoters sell out their shares at a good advance, pocket the profit on the contract, and are ready for a new deal.

Who makes the money—the company, the farmer, or the promoter? And who is the leading promoter in the country? Who is responsible for the erection of so many beet sugar factories, some paying and some not? Who is the head of the largest construction company? Who is the principal lobbyist at Washington, inspiring all this unjust treatment of the nation's dependency, and making the path of Americans of the East so hard and difficult to travel? Who is the man whose influence is so great that Congress must bow down before him, and cater to his wishes?

He is a promoter pure and simple, and his name is Henry L. Oxnard. By the deluded farmers considered a public benefactor; by others, his name is a synonym for a corruptionist of the worst type. Glutted with vanity and power, he now aspires to a seat to the United States Senate, where he can better protect the interests of his clique.

Such is the protection the United States is giving to one section of the country, to the detriment of another. The protection of the beet sugar industry is purely a legal license for the further enrichment of the beet sugar promoters; for, if left to itself, its development would take a natural course, and increase according to its value as a commercial investment. The great hue and cry raised by Oxnard and his companions is to protect their own enormous profits and close the eyes of their dupes to the real state of affairs.

The Philippine planter, however humble his station, however antiquated his methods, has a legitimate right to look ahead into the future, and hope for the time when he can compete with his more powerful rivals. The American who has made the islands his home has the same inalienable right to choose his line of occupation without the restrictions imposed by the will of a few public leeches.

UNDER the heading of "Legitimate Occupation," Indian Engineering, of Calcutta, makes the following brief editorial comparison between the Mining Bureaus of the Philippines and India: "In the Philippine Islands a Mining Bureau as already in active existence, and we note that economic geology is a feature in its functions-that is, the examination of deposits of coal, iron, etc., with a view to their utilization for commercial ends. That work is now done in India by the Geological Survey-the Mining Bureau being concerned apparently with the labor conditions only of the mineral industries." This is only another recognition of the value attached to such work, and is a fitting answer to the arguments of the pessimists and "kickers" against too many bureaus. The work of such a Bureau, as conducted at present under the supervision of an expert mining engineer, will pay for itself ten times over, in the course of a few years.

MANILA SEWER SYSTEM

The plans for the construction of a complete modern sewer scheme for the city of Manila have been practically completed. The work has been under the direct supervision of Mr. L. Ingalls, C. E., since its inception, and completely separated from the work of the City Engineer's office, which position Mr. Ingalls ably filled, prior to his being appointed to the more important work. The engineering difficulties met with and overcome have been many. Manila, owing to its almost perfect level and only a few feet between the street and high water mark, with almost total absence of grade, has necessitated a system entirely different to ordinary practice.

Probably the only city in the United States presenting the same general characteristics is New Orleans, and the plans provide for a system somewhat similar in its scope.

In the scheme planned by Mr. Ingalls the city is divided into two distinct districts. North and South, with the Pasig River as the dividing line.

Instead of discharging into the river the flow is directed in the opposite directions. To the north the drains all lead into the main conduit on Azcarraga St. Between the bay and Calle Alix are three small pumping stations. These are placed at suitable distances at the end of the grades. The sewage flows into a concrete catch basin, where it is pumped up and delivered into the next section, where there is sufficient head to carry it to the next pumping station. The operation is repeated at the other two stations until the sewage is collected at the well of the main pumping station. Here it is elevated to a height to give it sufficient head to discharge into the bay at a distance of 2000 feet from the low water line.

The same general scheme is followed out for the southern district, the mains discharging from the pumping station in Malate into the bay at a distance of several hundred feet.

In all 6 auxiliary and 2 main pumping plants are provided for. During the visit of Mr. Desmond Fitzgerald, the waterworks expert who was called to pass upon the plans for the new water scheme, he was also requested to pass judgment on the sewer project as planned by Mr. Ingalls. It is gratifying for Americans in Manila to learn that, with the exception of one detail, he fully approved the plans of Mr. Ingalls as he had those of Mr. Case for the waterworks. Nothing more fully indicates, as far as the public works of the Islands are concerned, that they are in the hands of competent and experienced engineers who fully understand their business.

Mr. Fitzgerald approved the general scheme, but favored only one outlet into the bay, throwing the volume of sewage into the northern mains on Calle Azcarraga. This naturally necessitates the conduits from Ermita, Malate, and the Walled City being carried across the Pasig, and the consequent enlargement of the pumping plant and mains at the northern discharge point. It abolishes the station in Malate, but increases the general estimated cost some

It would appear that no advantage is to be gained by the adoption of this method. The object seems to be the fear that the beach along the residential section of Malate and Ermita would become polluted, which would be obviated if all the sewage was disposed of through the northern discharge at a distance of 2000 feet from shore.

Mr. Ingalls by a very complete series of float observations has demonstrated that the currents on a calm day along the Malate shore set in a southerly direction towards Pasay and are there deflected outwards. During the summer months, the wave motion is sufficiently strong to thoroughly disseminate the sewage in the surrounding water before it has an opportunity of polluting the beach.

The discharge outlet at Malate, while only a few hundred feet from shore, is at a depth of 20 feet. The Tondo main discharges at a depth of only 10 feet.

This work, in connection with the new water system, will make for a decided improvement in the general health of the city, and once completed will permit the prosecution of other much needed reforms, especially to the streets. Until these two undertakings are completed, it would be a waste of money to attempt any permanent betterment of the road beds, as the work would have to be all done over again.

It is the intention of the government to commence these works as soon as the finances are available, and it is expected that the waterworks scheme will be ready for inviting tenders about the end of the year.

Mr. Clarke A. Bradshaw, who sails for the United States on the 15th inst., will represent the Far Eastern Review, during his absence. Mr. Bradshaw has been connected with the American Hardware & Plumbing Co. of Manila, and is fully conversant with trade conditions and requirements in the Philippines.

We have been favored with a visit from Mr. Trevor Corry, the business manager of the American Asiatic, the well-known commercial journal of San Francisco and Seattle. Mr. Corry is touring the East in the interest of his paper, and enlisting support for a special

edition to be called the "Pacific Advance Number," which has the hearty support of the Pacific Chambers of Commerce and firms doing business with the Far East. The American Asiatic has earned a well deserved place amongst the commercial element of the East, for the wealth of its thoroughly reliable trade statistics and other information tending to increase the influence of American trade interests in the Orient. The special edition will be elaborately got up, and will contain articles by men of note connected with trade expansion or the advance of American influence in the Pacific. We extend our best wishes to Mr. Corry and his paper, and trust that it will achieve the success merited.

GEO. FENWICK & CO., LTD.

PRELIMINARY NOTICE TO SHAREHOLDERS.

The directors of the above Company beg to notify the shareholders that, owing to the present premises having become unsuitable for their business, and to other causes, they have lately acquired a convenient and valuable site at North Point of about 215,000 square feet, with a deep water frontage of 400 feet in length; and that this site is now in progress of reclamation. When reclaimed, it is estimated the site will cost the Company about one dollar per square foot.

Temporary arrangements have been made to finance the scheme to this point, but to liquidate this, and provide new buildings and machinery, the Directors consider it will be necessary to increase the capital of the Company to \$450,000; an increase of \$300,000 over

They hope within a reasonable time to dispose of the property presently occupied by the Company, which should fetch a good price, as the lease is held on a 999 years' tenure; and, being a marine lot, carries the right to the projected reclamation pertaining to the frontage.

Shareholders will in due course be notified of the meetings necessary to sanction the proposed increase of capital, which it is not expected will be required before from nine to twelve months from date. Meantime any suggestions from shareholders regarding this scheme will receive the careful consideration of the directors.

Hongkong, 30th June, 1904.

THE STRAITS ENGINEERING SYNDICATE, LIMITED

The above company has just been incorporated at Singapore, under the Companies' Ordinance, 1889, with a share capital of \$160,000, which is divided into 1,600 ordinary shares of \$100 each. The directors, pro tem. are Messrs. A. Hood Begg (manager, Messrs. Guthrie & Co., Ltd.), W. M. Syme (Messrs. Syme & Co.), Chee Quee Bong (manager, Opium Farm), and Lim Chwee Chean (ship owner). The managing director is Mr. A. J. Corbett, M. I. M. E., late manager, Messrs. Howarth, Erskine & Co., Bangkok, and who also had considerable experience in their Singapore Office. Mr. E. Cropley is the works manager. Mr. Cropley is the late superintending engineer of the Petroleum Oilfield, Belembang. The Secretary is Mr. A. W. Westerhout, for several years managing proprietor of the Malacca Engine Works. The registered office is at the Albion Engine Works, 370, Beach Road, Singapore.

The Straits Engineering Syndicate was originally started by Mr. Albert Lyons in 1892. Early in 1893 he was joined by the present secretary. When Mr. Lyons retired, Mr. Cropley took his place. Great credit is due to Mr. Westerhout, who, with the assistance of the directors and original partners, succeeded in floating the Syndicate into a limited company at such a stagnant time. We are informed that there are now only 180 shares available. The Syndicate are prepared to undertake all kinds of engineering work, and make a specialty of repairs to steamers, owing to their enjoying special facilities afforded them by the extensive sea front to their works. They are also prepared to erect rice, saw, oil, and tapioca mills, with the latest improvements invented by the late Mr. J. M. Lyons .- S. Times.

SHIPBUILDING IN THE FAR EAST

(Continued from page 3.)

ity are bright, and in the natural order of things a large percentage of the future shipbuilding in China will devolve upon the establishment nearest the center of the greatest demand.

Shanghai, guarding the outlet of the great Yangtsze River with its immense volume of traffic, will reap the full benefits of this impetus to trade, and her manufacturers will be in the most favored position to meet the requirements of the situation.

With a capital of 5,520,000 Taels, fully paid up, the shares of S. C. Farnham, Boyd & Co. are now quoted at 143. The dividends for the year ending April 30, ulto., amounted to 12 per cent.

We present herewith a brief description of the docks and plant of the company. respectively, are fitted on the wharf and supplied with all necessary steam and hand appliances.

There is a machinery Show Room, ample Godown accommodation for the storing of material, a Paint Store; connected with this dock are:—

A Foundry with facilities for casting iron or brass up to 12 tons or more if necessary, with two water-tight moulding pits, powerful blowers and grinding mills.

A Blacksmith's Shop, where engine shafting and forgings can be made up to almost any size, with steam and belt hammers and blowers.

Extensive Machine Shops and Coppersmith Shops, with all the latest improvements in tools, as lathes, planing, drilling, shaping, milling, and screwing machines to do all kinds of work,

A Shipbuilding Yard under cover for the building of Pontoons, Lighters, Steamers, Tugs, Launches, etc.

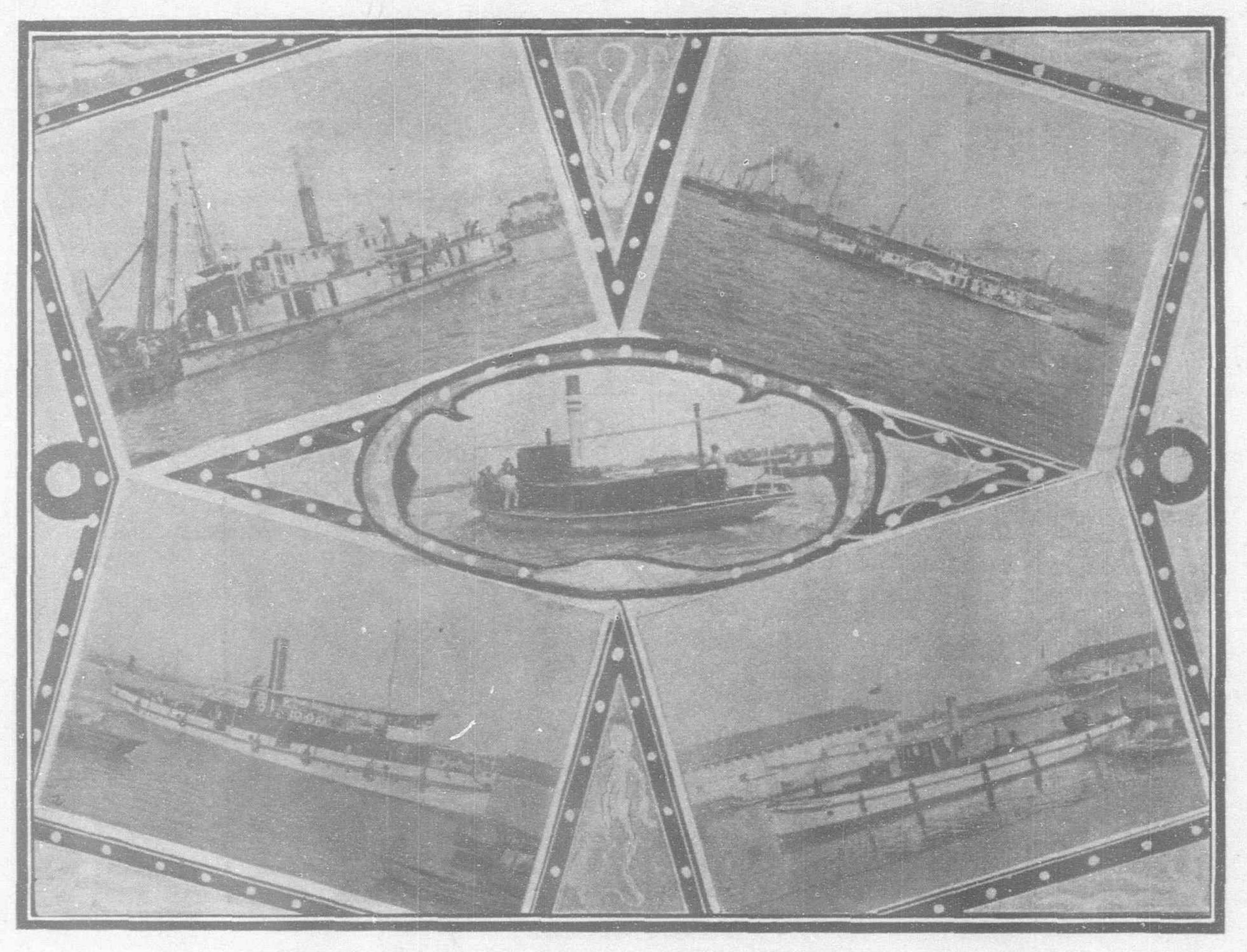
A Wharf, Pontoon, and Buoy, belonging to the Dock, where vessels can lay at while undergoing repairs. The river frontage is 473 feet and the area of property is 26½ mows. A railway line runs through the workshop.

To facilitate night work the Dock Offices and the Shops at the Old Dock are lighted up by electric light, steamers under repairs can have electric light supplied.

TUNKADOO DOCK.

The Tunkadoo Dock is situated in Pootung, above the Harbor Limits, and is of the following dimensions:—

Length on Coping 362 ft.



Types of Steamers built at the works of S. C. Farnham, Boyd & Co.

- 1 Shallow draft Twin Screw River Gunboat "Olay." Built for French Government for the upper Yangtsze River.
- 2 Mail Tender "Victoria," built for Shanghai Tug and Lighter Co., Ld.
- 3 Side Wheel Gunboat built for H. B. M. Government, for service in the upper
- Yangtsze River. Speed 15 knots. First steamer to make trip through the Ichang Gorge.
- Single Screw Launch, built for the Hamburg-America Line. Length 60' 0". Breadth 10' 0". Depth 5' 9".

Type of Harbor Launch.

OLD DOCK.

The Old Dock is situated in Hongkew, on the Shanghai side of the River Whangpoo, in a very central position, close to the business part of the settlement, and is of the following dimensions:—

Length on Coping...... 400 feet Length on Blocks...... 399 feet Breadth at Entrance at High

Water, ordinary spring tides 53 feet
Depth of High Water at ordinary spring tides on sill. 16 feet
Height of sill above bottom

This dock is fitted with three (3) centrifugal pumps driven by compound engines which can pump the dock dry in about 2 hours.

Two pairs of sheer legs to lift 40 and 25 tons

appertaining to repairs and construction of engines, including Plant for bending copper pipes, galvanizing, etc. The largest lathe will take shafting up to 32 ft. and swing work up to

9 ft. in diameter.

A Boiler Shop, where boilers for sea-going vessels, large River Steamers and Launches, with working pressure up to 200 lbs., have been built. It contains powerful steam and hydraulic machinery with all latest appliances.

The Saw Mill contains all kinds of woodworking machinery driven by steam, also pattern maker, and carpenter shop with necessary tools.

The Electrical Department has a store well equipped with Electric fittings, and a shop for building dynamos and carrying out repairs to Electric Light installations.

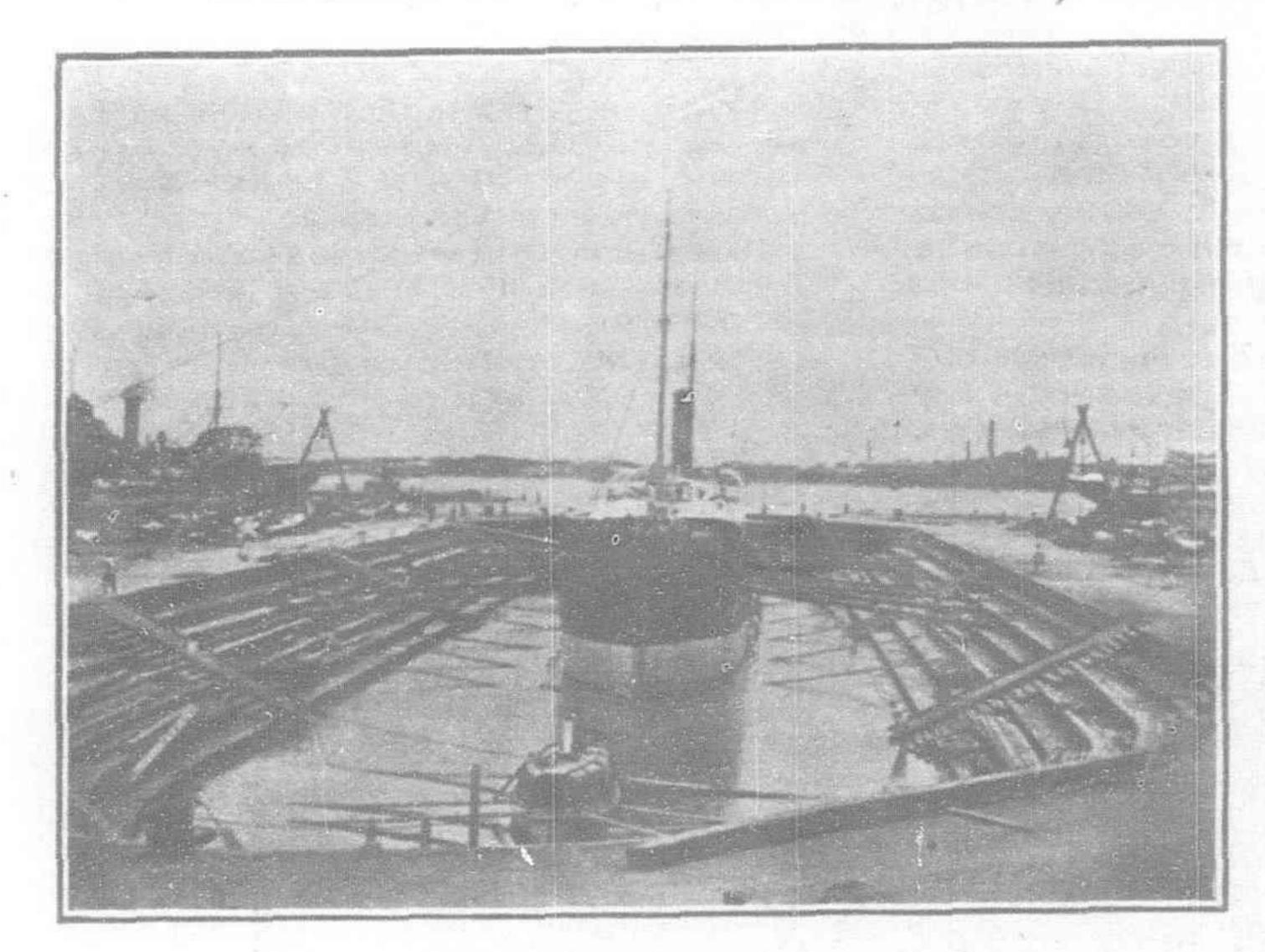
This dock is fitted with a centrifugal pump, driven by an engine which can pump out in about three (3) hours.

The area of the property is 35.7 mows and the water frontage is about 700 feet.

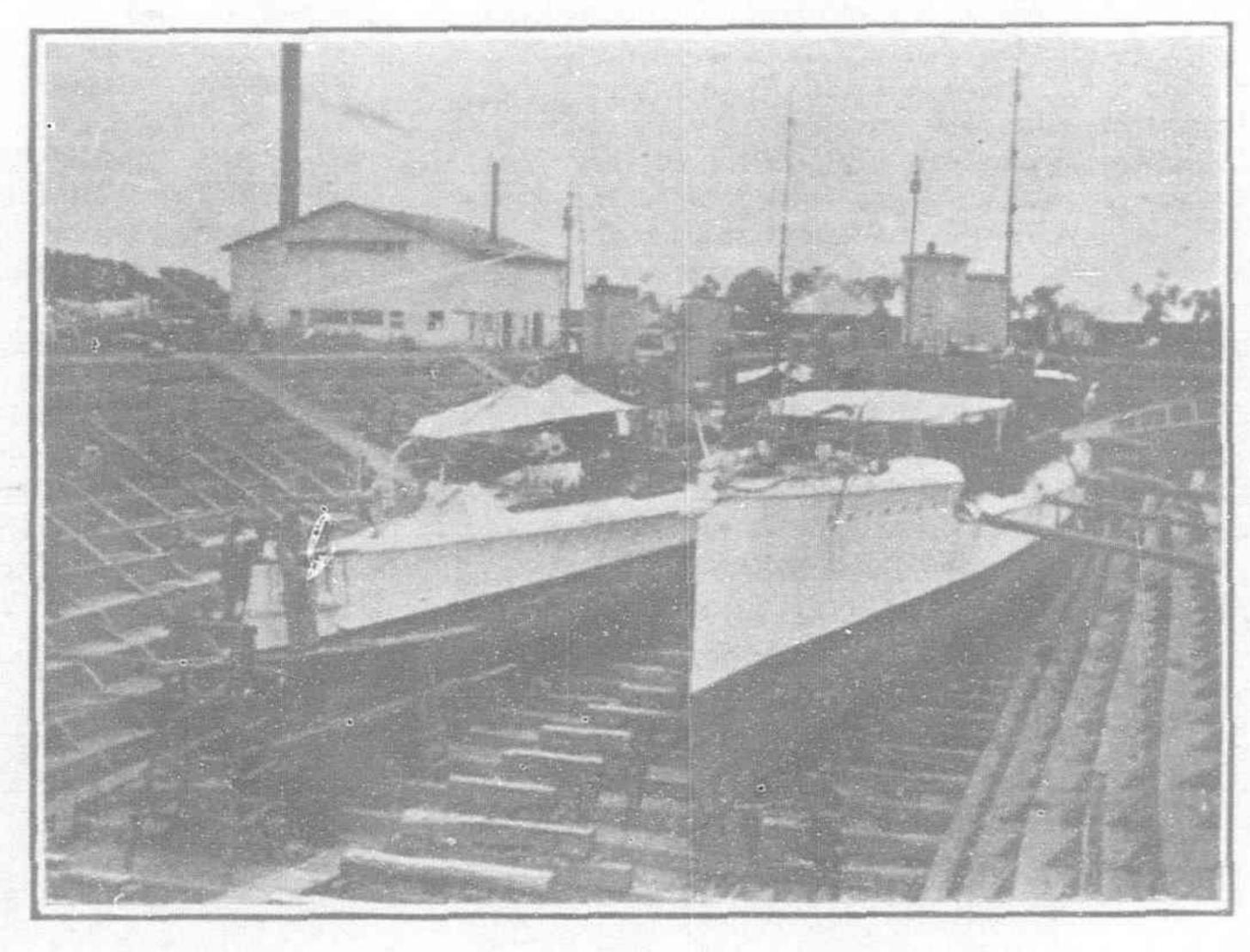
The sheer legs are capable of lifting 60 tons, and two (2) wharves allow vessels ample room to lay while undergoing repairs.

On the south side of the dock there is a carpenter shed and slip way for repairs to small crafts, a Paint Store, a Blacksmith Shop, with various tools for iron work, as punching,

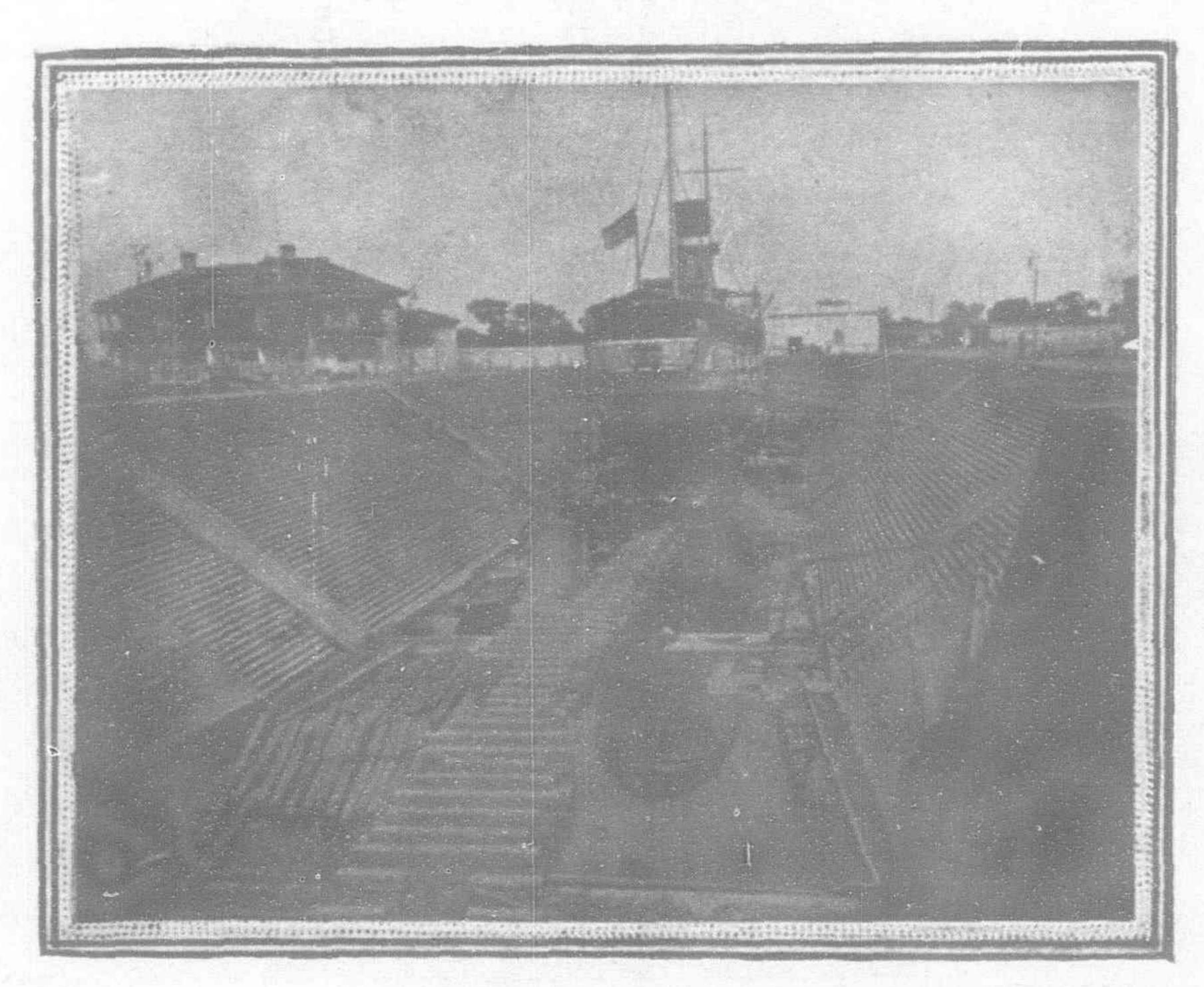
DOCKS OF S. C. FARNHAM, BOYD & CO., LD., AT SHANGHAI, CHINA



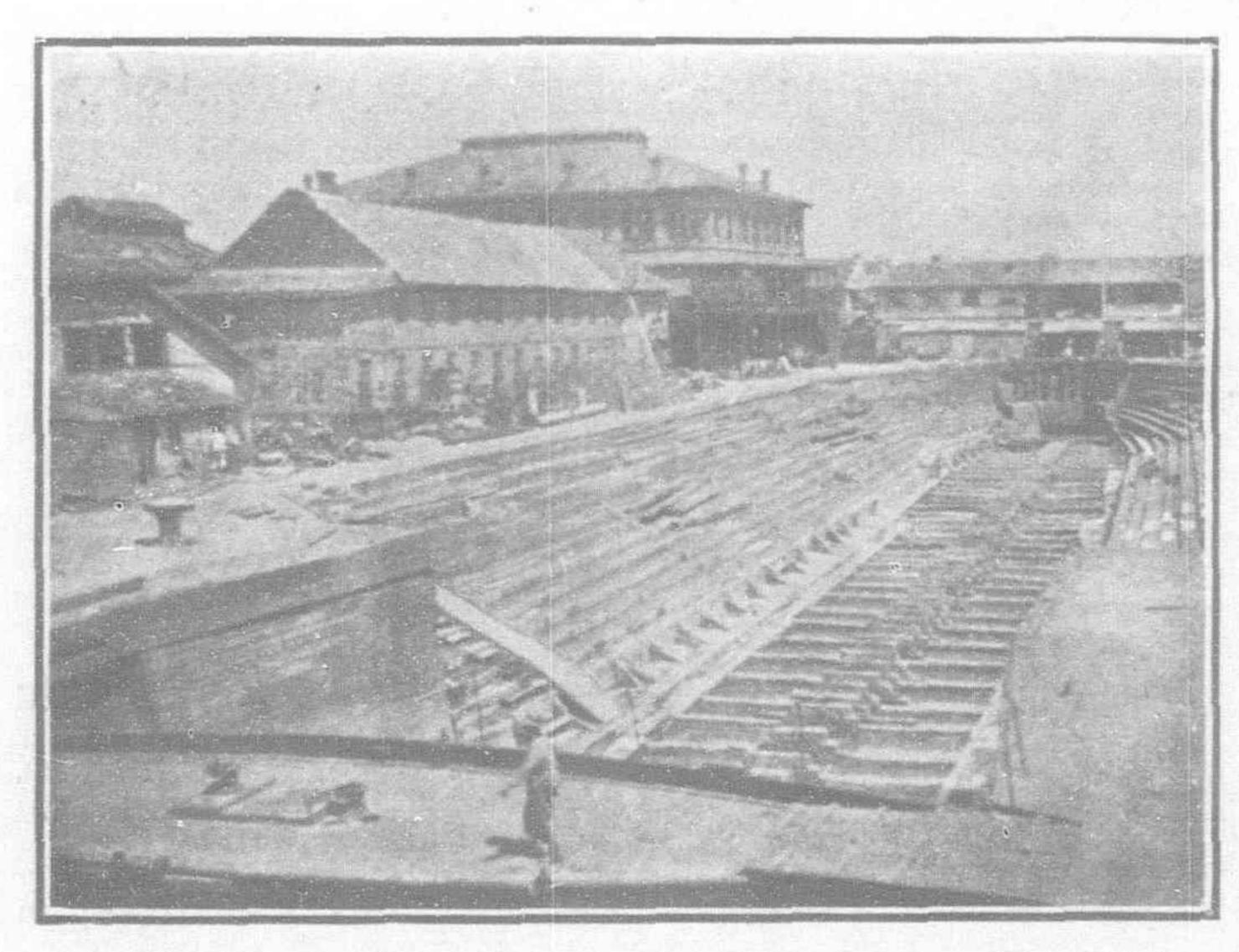
NEW DOCK.



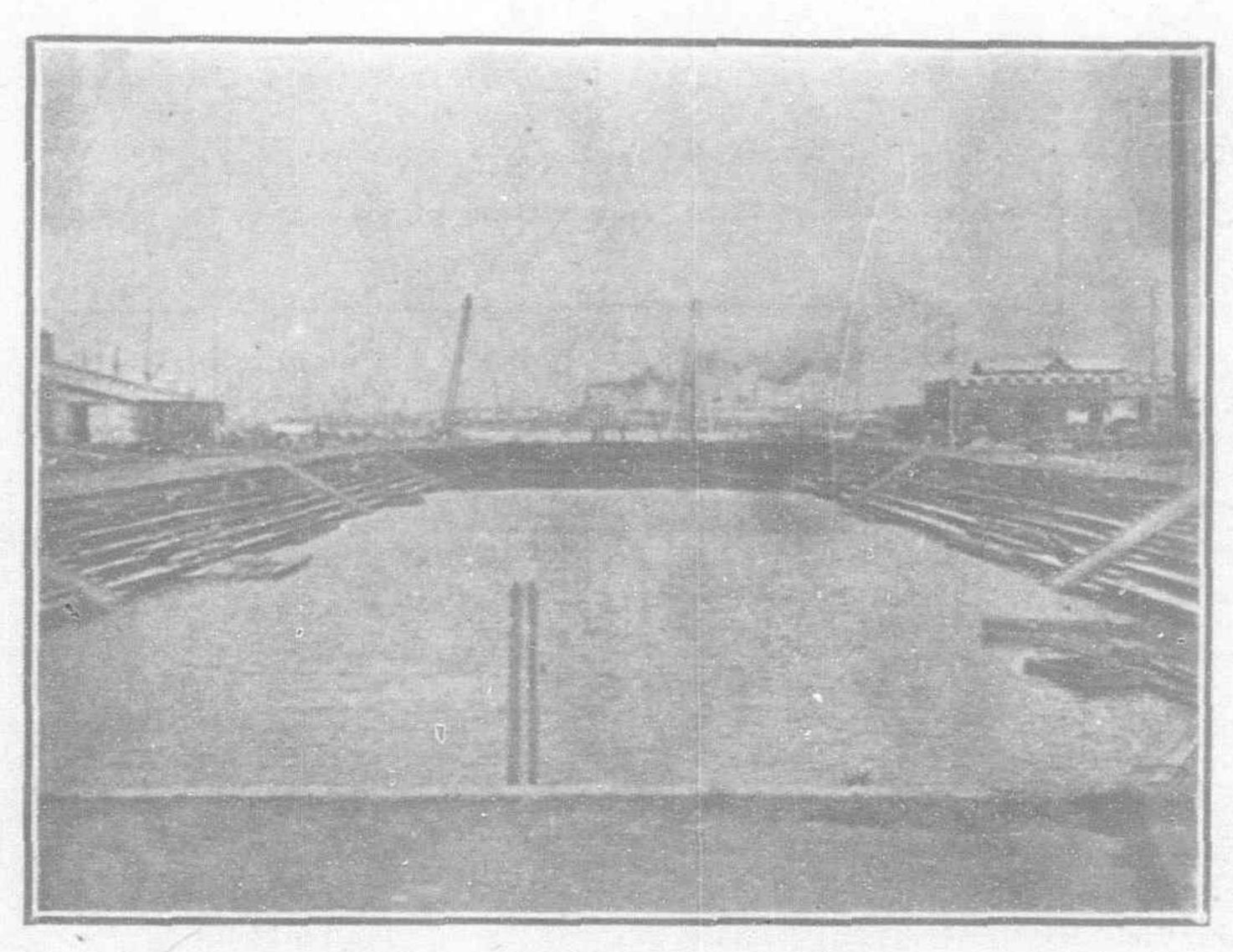
TUNGKADOO DOCK. U.S. TORPEDO BOAT DESTROYERS IN DOCK.



INTERNATIONAL DOCK.
U. S. A. Transport Ingalls in dock.



OLD DOCK.



COSMOPOLITAN DOCK,

cutting, drilling, rolling machines, etc. Two (2) large buildings afford accommodation for housing officers and crew and storage of material, etc.

On the north side of dock there are berths for shipbuilding and slips for hauling up small boats. COSMOPOLITAN DOCK.

The Cosmopolitan Dock is situated in Pootung, below the Harbor Limits, and is of the following dimensions:-

Length on Coping 560 ft. Length on Blocks 532 ft. Width at Entrance at Coping .. 79 ft. 6" Width at Entrance at high water, ordinary spring tides..... 77 ft. 6" Depth of high water at ordinary spring tides on sill 24 ft. Height of sill above bottom of

Dock 2 ft. 6// This Dock is conveniently situated below the shipping, and has an easy entrance lying at about an angle of 44 degrees to the River. It is capable of accommodating any vessels which can come over the Bar. Particular attention has been given to every detail for docking and repairing vessels.

The pump house is fitted with three (3) Boilers, two (2) Lancashire type and one (1) Water Tube type, having a working pressure of 135 lbs, per square inch. They supply steam to five centrifugal pumps, driven with compound engines, capable of pumping out the dock in three (3) hours.

There is a large Ship Yard, Carpenter Shop,

Saw-Mill, Paint Store, etc.

The Boiler Shop is 300 ft. long, with a traveling crane capable of lifting 60 tons, which traverses the whole length of the shop, and complete plant of the most modern type of machinery recently imported from Europe, for general repairs and the manufacturing of Boilers, with plate and angle furnaces, a bevelling machine and all latest appliances for extensive shipbuilding.

Electric light is fitted for night work in the shops all round the dock. Steamers under repairs can have electric light supplied.

INTERNATIONAL DOCK. The International Dock is situated in Pootung, below the Harbor Limits, adjoining the Cosmopolitan Dock, and is of the following dimensions:-

Length on Coping 540 feet Length on the Blocks to the Length on the Blocks to the caisson when in inner chase...460 feet Width of the Entrance at the bottom. 64 feet Width of Entrance on top --- 79 ft. 6" Width of Entrance at ordinary high water level..... 77 ft. 6// Width in the Dock at bottom .. 54 feet Width of the Dock at the top __ 128 feet Depth of high water at ordinary spring tides on the sill .. 23 ft. 6" Height of sill above bottom of I ft. 6"

The Dock is capable of accommodating any vessels which can come to Shanghai, and is fitted with four (4) centrifugal pumps with compound engines, capable of pumping out the water in the Dock in about two (2) hours.

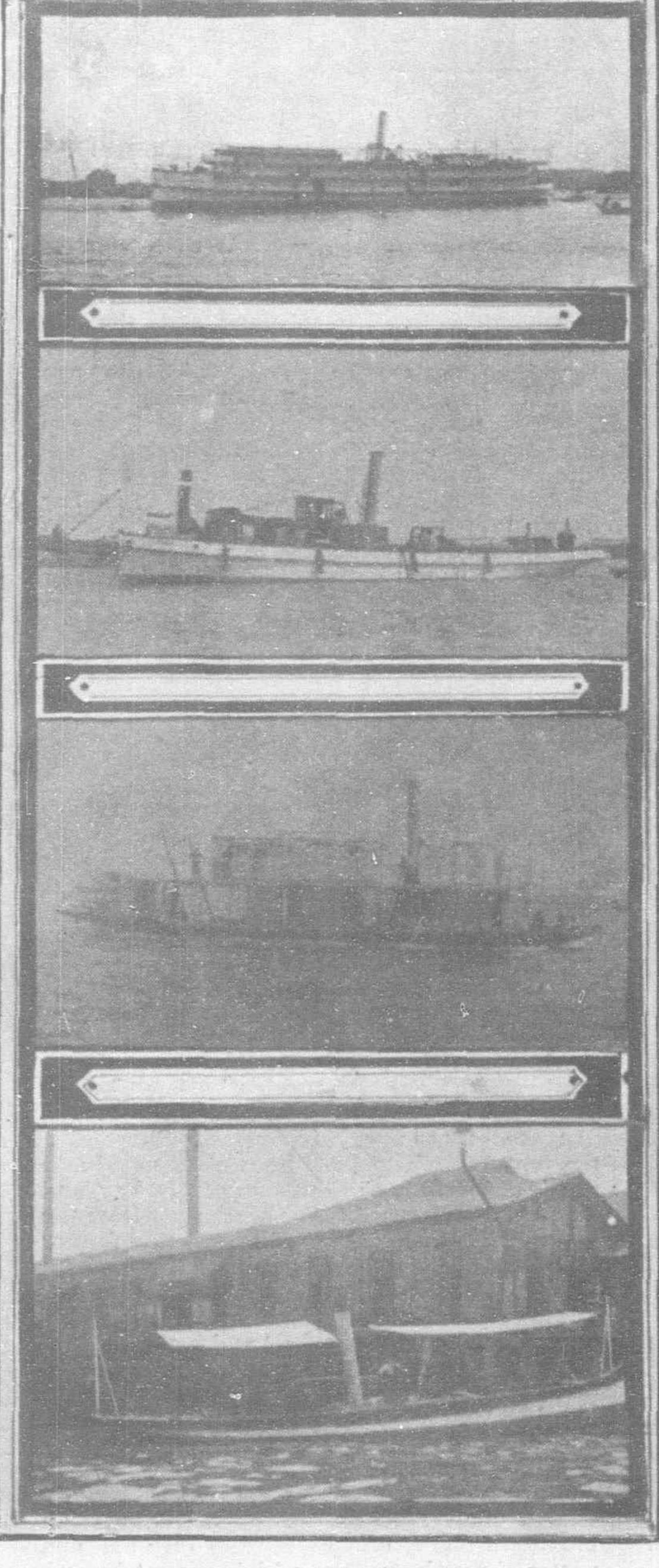
There is a wharf on each side of Dock entrance and a large yard for building ships and undertaking repairs, and sheer legs for heavy lifts.

The Workshops are as follows:-Machine Shop, Boiler Shop, Moulding Shop, Pattern Shop, Coppersmith Shop, Blacksmith Shop, Carpenter Shop, Paint Store, etc., with railway lines passing through them and extended to wharf and ship yards.

The Machine Shop, which measures 260'0", has two (2) lathes of 54' or and two (2) of 44" centers, with a 46' o" bed, and both may be connected to take a shaft of over 70' o".

Special lathes are also in use for the turning of the shaftings, pulleys, etc. There are several planing, machines, the largest being capable of running over a surface 14' on square. Amongst the drilling machines there is a large horizontal machine which can cover an area of 8 feet by I feet without moving the material, and radial machine with a radius of 10 feet.

The Boiler Shop has a drilling machine to



Types of steamers built at the works of S. C. Farnham, Boyd & Co., Ltd.

S. S. "Sui Tai." Five steamers of this type were built for the Hamburg-America and North German Lloyd S. S. Cos. for the Yangtsze River service.

Type of River Launch.

Stern Wheeler for inland river traffic.

Steam Launch.

take a boiler with a diameter of 15 feet, and a plate edge machine with a 24 feet range. There is a complete net of hydraulic riveters up to 11/8" in diameter.

The Blacksmith Shop has a four-ton steam hammer, in close proximity to blowers and furnaces for the forging of shafts 16" in diameter.

For lighting the Dock and Works there are 57 arc and 220 incandescent lamps.

Steamers under repairs can have electric light supplied.

The Water Frontage at the Cosmopolitan and International Docks is joined together, and measures about 4465 feet, with deep water the whole length. The combined area of the property at these docks is over 340 mow, or 58 acres.

Large buildings at both docks afford ample room for housing crew and storage of material,

Dwelling houses are built on the south side

of the property, giving ample accommodation for foremen and workmen.

NEW DOCK.

Is situated at Pootung, just within the Harbor Limits (Lower Section), and is of the following dimensions:-

Width at Top 134 feet Width at Entrance pier heads .. 75 ft. 6" Width at Entrance at ordinary high water level..... 74 feet Depth of high water at ordinary spring tides on sill _____ 21 ft. 6" Height of sill above bottom of dock.

The dock is fitted with four (4) centrifugal pumping engines and can be pumped out in about three (3) hours.

The area of the Property is 75.62 mows or 12.6 acres, and the water frontage, 1084 feet.

There is a wharf on each side of Dock, with iron sheer legs capable of lifting 65 tons, a Smithy, machines for corking ship's plates, Paint Store, and ample Godown accommodation.

POOTUNG ENGINE WORKS. This is one of the finest of the Company's properties, and is situated in Pootung. The buildings are very substantial, being for the most part built of brick and masonry. In the yard is a hydraulic double piston riveter, the largest in China.

The Engine Works cover an area of 16 acres, and comprise: - A Pattern Shop, complete with wood-working machinery.

Saw-Mills, with a self-acting Steam Upright Saw capable of cutting a 36" log into 1" deals at one cut; band and circular saws, wood planing and moulding machines, etc.

A Carpenter's Shop, 134' c" x 40 feet, with moulding loft overhead, large enough for draw-

ing down vessels of any size. A Machine Shop, 200 ft. x 55 x 38 ft. high, lighted by electricity, and with a ten (10) ton overhead traveling crane running the length of the building. It is fitted up with modern machinery and capable of turning out work in the most expeditious manner. The largest lathe will take shafting up to 28 feet and swing work up to 16 ft. in diameter. Adjoining is an Erecting Shop, 200' c" x 55 ft. x 38 ft. high with a 20 ton overhead traveling crane.

The Foundry, 163 ft. x 62 ft. x 31 ft. high, contains one drying stove 33 ft. long, 21 ft. wide, 18 ft. high; one drying stove 25 ft. long, 8 ft. wide, 18 ft. high and five Cupolas connected to a Baker's Patent Blower and Engine.

One brass air furnace for large castings. Three (3) brass crucible furnaces. One 20-ton Steam Crane to lift a radius of 25 ft. and six hand cranes of various capacities.

The Blacksmith Shop is 173 ft. x 62 ft. x 31 ft. high and contains 50 fixed hearths, two 4ton cranes, and two steam hammers, of 1/2 and 34 tons respectively.

The Smith's Forge, 97 ft. x 63 ft. x 25 ft. high, contains: A reverberatory furnace; two 8-ton cranes, 20 feet radius; one 11/2 ton steam hammer and 12 fixed hearths for large forgings.

The Boiler Shop and Ship Yards, partly under cover, have 5 Plate Rolling Machines to take plates up to 20 ft. long. A Double Power Hydraulic Riveting and Plate Closing Machine with Steam Accumulator and Pump: Maximum pressure, 150 tons, to rivet 1 1/2" diameter rivets. I Hydraulic Riveting Machine to rivet 11/2" diameter rivets.

I Portable Riveting Machine Beam and Lift, Plate and Angle Furnaces, Drilling, Countersinking, Punching and Shearing Plate Edge Planing Machines, etc., also Pneumatic Tools of the most up-to-date kind for Boilermaking and Shipbuilding.

The Coppersmith Shop, 52 ft. x 47 ft. x 17 ft. high, is repleted with everything necessary for carrying out work in this department.

Four (4) Spacious Godowns contain a very large stock of materials for building and repairing Ships, Engines, and Boilers.

A pair of Sheer legs to lift 35 tons stand at the head of the Wharf, a line of railway running from same to the various shops. The shipbuilding yards face the river.

RAILROADS

NEW RAILWAY STATION, SYDNEY. — Mr. Bent, the State Premier, has decided to call for alternative tenders for the erection of the superstructure of the new Central Railway Station. The first tender will be called for the completion of the work in brick with cemented dressing; the second for brick with Pyrmont stone dressings, and the third for brick with Stawell stone dressings.

TRANSAUSTRALIAN RAILWAY.—Despite its unfavorable reception on two occasions when it has been suggested in the House, the Transaustralian railway survey proposal will probably be again placed before members at an early date. The chief opposition to the scheme, which provides £20,000 for the work of survey, will come from Victorian members.

RAILWAY EXTENSIONS, CHINA .- A Peking telegram says that Shang Suenhwai, who is authorized to grant the construction of branch lines of the Peking-Hankow Railway, provided these lines do not exceed 150 kilometers in length, has recently asked the central authorities for permission to have the scope of the authorization extended so as to suit the need of the times. In addition, Shang has urged the speedy sanctioning of the applications so far forwarded for the construction of certain branch lines. In this connection it is also reported from Peking that the road-bed of the Chengtinghu to Huailai section, 25 miles long, of the Chengtai Railway has been already completed.

The Luhan Railway—Pekin-Hankow.

—The ninth section of the Luhan Railway, in Honan, has been completed. It is intended to construct a special branch to Yuchow in order to obtain coal to supply the locomotives on the system. The Sub-Prefect of Yuchow, however, objects to this course, on the ground that, if it be taken, the mining interests of the entire region will be in danger of passing into the hands of foreigners. He has, therefore, forwarded a petition, embodying these views, to the higher authorities.—Eastern Times.

RAILWAY REPORT, CEYLON .- The report of Mr. H. S. Harington, M. I. C. E., Agent and Chief Engineer of the Kalka-Simla Railway, on the Kelani Valley and Uda-Pussellawa Railways in Ceylon, has been published. Mr. Harington, who specially went over to Ceylon from India to report on these railways, has also reported on other proposed railway extensions on the Island. His impression of the K. V. Railway is that it is "too good." The Uda-Pussellawa Railway is condemned and the construction of similar lines strongly deprecated. Useful recommendations are given of proposed extensions. As regards the Northern Railway, the removal of the rails on it are recommended, also that the line be relaid with heavier rails. -Englishman.

THE TURKESTAN RAILWAY .- The war in the Far East, to judge from the items of information which comes to hand from time to time from Turkestan, has in no way diminished Russian military and railway activity in the latter quarter. The Government "retrenchment" scheme, recently applied to the Russian Budget drawn up before the war began, cut down Imperial expenditure for the current year under, among others, the heading of railway construction. The "strategical" line through Turkestan, the necessity of completing which with the minimum of delay was so strongly urged by the late Governor of Turkestan and Commander-in Chief of the Turkestan Forces, Lieut. General Ivanoff, in order to secure a double base of operations against Afghanistan, appears to have escaped the operation of the provisions for retrenchment. Work on the Turkestan line is still being pushed forward

with vigor; and the latest telegram from Orenburg, dated yesterday, states that the navvying work on the section of the line linking the northern and southern stretches is approaching completion. With a view to laying the entire line with all possible despatch, work was begun almost simultaneously from both ends. The telegram adds that 900 versts of the line have already been successfully laid from the Orenburg end, while 540 have been laid from the Tashkent end. Three hundred versts remain to be laid. The gap is expected to be bridged "towards the autumn." The opening of the line to Tashkent is anticipated for next spring. In a few days' time the railway will be opened to "commercial" traffic between Tashkent and Perovsk. The telegram adds that passenger trains run twice a week from Orenburg to Aktinbinsk. The Orenburg branch of the Samara-Slatoust line from Kinel to Orenburg has already been linked up with the Tashkent line .-London Times, June 27.

The Russian Strategic Railway in Central Asia, which will place Tashkent in direct communication with Orenburg, will be finished, it is expected, by this autumn.—Pioneer, July 14.

QUEENSLAND RAILWAYS .- Queensland has in all 2,828 miles of completed railways. Three main lines run from Brisbane, Rockhampton, and Tounsville into the pastoral districts of the west. The first two are on the eve of being connected by a coastal line. The southernmost goes to Cunnamulla, a distance of 604 miles. The line from Rockhampton extends to Longreach, 424 miles, and the northern line, after a southerly deflection to touch Charters Towers, continues westerly and south-westerly for a distance of 370 miles to Winston. Short independent lines have also been constructed in w the interior from the seaports of Mackay and Bowen. Lines still further north start from the towns of Cairus and Cooktown, the former intended to tap the Herberton district, a locality of extraordinary resources, abounding in mineral wealth, with a glorious climate (due to its elevation of 3,000 feet) and a soil capable of growing any description of vegetable product. It was worth an effort to tap such a district, but it proved a very expensive one, 471/2 miles of railway costing £1,257,992. The heaviest part of the line has been accomplished, and the margin of a region of great mineral wealth now reached. The line hangs on mountain sides, crosses roaring torrents, and passes through scenery which cannot be surpassed in wild beauty. A private line from Marreeba to Chillagoe, 100 miles long, has been constructed by a private company and opens up a locality containing vast mineral deposits. Besides these railways there are numerous branch lines, and one connecting with the railway system of New South Wales. A traveler can now get into the train at Brisbane, or to take an even longer journey, at either Rockhampton in the North, or Cunnamulla in the West, and proceed by a continuous line of railway to Adelaide, passing through New South Wales and Victoria to South Australia, a distance of 2,262 miles .- Indian Engineering.

LOCOMOTIVES FOR THE B.-N. R.—The requirements of the Bengal-Nagpur Railway system are said to demand over a hundred locomotives, but the Home Board could only see their way to sanction a half of that number of engines under the circumstances, it is said, of the uncertainty with regard to the best types to adopt with regard to "standardization" and the Government of India Rules.—Indian Engineering.

THE KASHMIR RAILWAY.—A fairly practical scheme has been, it is said, at last elaborated as to the route, etc., and merely awaits official sanction. Private inquiries show that, among the many proposed routes, that which is ap-

parently the most desirable is the one which brings the railway in through the Shupian Road and Pass. One advantage of the route is said to be the coal mines which lie along it and which will be opened up. The project will be a most expensive undertaking, and the question is, would the end justify the means?—Indian Engineering.

Peking Hankow Ry.—On learning that the Belgians have purchased over 2,000 shares of the Yueh Han Railway Syndicate, the gentry of Hunan and Hupeh are urging the Government at Peking to withdraw the concession. They even urge the Government to buy back the shares at a sacrifice. Although Sheng Sun Wy has pointed out the difficulties in the way of getting the concession cancelled, the gentry of Hunan and Hupeh, led by Wong Chi Chun, persist in arguing to the contrary. It is reported that the Government has sent Taotai Chang Hok Ling to Shanghai to see what can be done in the matter.

Chinkiang-Soochow-Shanghai Line.—
The Viceroy of Nanking has recently sent despatches to the different Customs Taotais to the effect that, as the construction of the Chinkiang-Soochow-Shanghai Railway is shortly to be commenced, they should endeavor to obtain the merchants of their districts as subscribers for the shares.

NIPPON RAILWAY Co.—A general meeting of the Nippon Railway Company was held at the Y. M. C. A. Hall, Kanda, on the 8th inst., and the following accounts submitted:—

Yen

Net profit 2,841,297.654 Brought forward from last account ... 384,765.459 Total 3,226,063.113 To be distributed as follows:-Legal reserve 142,064.890 Fund for the repayment of debentures and interest 21,879.000 Sinking fund for factories and 15,091.522 plants 262.719 Deficits 108,000.000 Rewards to officers Dividends (10 per cent.) ... 2,376,580.750 200,000.000 Special reserve Relief fund 20,000.000 Carried Forward 342,184.232

YUMAN RAILWAY.—It is said that as many as 2,000 Italians are engaged on the railway line from Hanoi to Yenbay. The section to Vietry has been open to traffic for some months and that to Thanba was finished a short time ago. The continuation to Yenbay is far enough advanced to permit of engines running almost right up to that point.

THE JOHORE RAILWAY.—The Daily Mail of July 13th thus comments upon the signing of the Johore Railway Convention:

Another great step forward has been taken in linking up railway communication with the Far East by the signature on Monday (July 11th) of a convention authorizing the construction of a railway through Johore. This in itself is a matter of great value to the sultanate, but of far higher importance to the British Empire, as it connects the Federated Malay States, of such great commercial promise, with Singapore. There are many notable conditions of the convention, the chief of which are the following:

The Federated Malay States are to construct the railway, which is 120 miles long, at an estimated cost of £1,200,000, and the Johore Government to maintain and work it. The maintenance, however, must be to the satisfaction of the former. The Federated Malay States advance the capital necessary, the conditions being that Johore shall pay 3 per cent; but if the railway earns more than 3 per cent, the Fed-

erated Malay States are to have all the profit up to 5 per cent. After 5 per cent, the balance is to be divided equally, and the Federated Malay States' portion is to be allocated to the reduction of the capital. Johore pledges its revenue to pay the 3 per cent.

The railway is to be constructed to the satisfaction of Johore, and the alignment and

designs are to be to its satisfaction.

The concern will be managed by a board of control of five members, three nominated by the Federated Malay States and two by Johore. The Federated Malay States are to have running powers over the line for through traffic, there being a division of receipts according to mileage.

Finally, there is a comprehensive arbitration clause, and-what is most important to the entire public, as the Crown Agents have managed to secure the right to purchase all material-all expenditure is to be subject to audit by Johore.

There is no doubt that the Sultan of Johore has exhibited great moderation and goodwill in the whole matter.

THE YUNNAN RAILWAY .- Correspondence of the N. C. D. News from Yunnaufu states that a thousand Italian navvies are actually working upon it somewhere or other; not to speak of Frenchmen, Greeks, and Chinese. There are engineers told off to the different sections, and embankments made all along the line. Even in Yunnanfu, embankments are being made, a station planned out, and quite a number of French engineers, all living together in a big kungkuan, as busy as the day is long. Having always heard of this railway as a sort of impossibility, it is quite startling to find it an actual reality. Trains, we are told, are running as far as Yenbai, and the only matter about which people differ is the date of their arrival here.

THE CENTRAL ASIAN RAILWAY .- The Peking correspondent of the Osaka Mainichi reports that a traveler just arrived in Peking, after having been in Central Asia, informed him that the Russian Central Asian Railway has reached already Andijan in the north-east of Felgana in the Pamirs, via Mery from Crasnovodosk in Persia. From Andijan the railway will be extended to the Yangtsze river via Hsianfu in Shensi, from Suchow and Lanchow in Kansuh, China. The construction of this branch line will be hurried on. Andijan in Turkestan will be remembered as a center of the Great Russian scheme in Central Asia, the same as Port Arthur in Manchuria and Kushk of Persia in the Far East. The railway was a military line, but now it is open to everybody. The Russian influence in the plateau and plain of Tienshan Peiln and Tienshan Nanlu or the Province of Hsinchang of China (including Ili) has now been established as impregnable. The Russians are now keeping the Mohamedans the same as Lhamas in Mongolia. The Russian merchants are entering and establishing themselves in these parts of Chinese territories. At Kashgaria, there is a branch office of the Russo-Chinese Bank, and at Ningsha a Russian Political Agent resides and acts as Consul. In these districts Russian gold coins are used as currency.

BURMA RAILWAYS .- Railways are progressing in Lower Burma. The proposed Pegu-Martaban railway has now been settled and the B. S. Railway Company has just issued a map showing the alignment of the intended railway. There are to be five stations erected between Thaton and Martaban. These are at Toungzoon, Vinnyain, Zingyike, Paung, and Gangaw. The company's Chief Engineer was there recently and has since left for Martaban to select a station site. Martaban is just across the Salween river estuary, there about two miles wide, from . Moulmein, which will be in touch with the railway by steam-ferry. This will bring the whole province of Tenassarim into close relations with Pegu and its chief town, Rangoon.

LOCOMOTIVE CONSTRUCTION IN JAPAN .- A1though a few locomotives have been constructed in Japan, the Japanese have not made the same progress in this department of industry as in some others, remarks Engineering. This, of course, is explained by the specialized nature

of the work required in a successful locomotive establishment. First of all, great experience is required on the part of those in charge, and men with this experience are not easily tempted to a foreign land like Japan. Then most of the machines and appliances require to be specially designed for the work, and the establishment confined to that alone, as the day is past when locomotives can be made, at a reasonable price, in a general engineering establishment. Then, lastly, every part of the work must be standardized, and this can only be done at very considerable preliminary expense, which comes rather heavy on a new establishment resting entirely on its own merits. Still the matter is going to be tried. The Anglo-Japanese Locomotive and Engineering Company (Ltd.) proposes to erect large works on a site which it has secured near Yokohama, Kanagawa-Ken, Japan, on a lease for 1,000 years, free of all charges except an Imperial tax of 21/2 per cent of its assessed value. It has its own wharf, it is adjoining the Yokohama-Tokio line of the Imperial Railway, and it is within 400 yards of the railway station. It is stated that a more suitable site for the works it would be difficult to imagine, as it has water and railway accommodation ample for its purposes, to whatever extent it may develop. Tenders have been received for the erection of the buildings, and all are to be completed within four months of signing the contract, and over 50 per cent of the capital has been promised. As soon as the capital has been paid in, the company will proceed with the construction and equipment of the works, which will take about seven months to complete, and be ready to commence the manufacture of locomotives and other machinery.

HSIAO-CHING HO RAILWAY .- In connection with the construction of the proposed Hsiao-Ching Ho branch line, the Governor of Shantung has concluded an agreement with the German railway company, which is represented by Mr. Hildebrand, chief engineer of the Chiao-Chon-Chinan line. The line will commence from the east suburb of Chi-nau and run to the south bank of the Hsiao-Ching, which is estimated to be about 2,500 meters or one and onethird mile in length. As this line was not contained in the Chiao-Chi agreement, the Governor of Shantung obtained permission from the Government for the Bureau of Commercial Affairs to construct it; but, owing to the short distance, the Bureau asks the company to construct the line on its behalf and it shall be regarded as the property of Chinese merchants after the completion without any interference from the Chiao-Chi railway company. For the purchase of the necessary lands and material the Bureau will lend Tls. 30,000 to the company, this loan to be refunded after completion of the branch line. The company will pay Tls. 800 per annum as rent for the lease of the line; but the Bureau shall, according to the agreement, have the privilege of communicating with the lessee, if any improvements are necessary on the line; and the Bureau will also have the privilege of purchasing the line at a reasonable price, deducting the sum of Tls. 30,000 before mentioned. The establishment of post, telegraph, and telephone offices will be reserved for Chinese officials and merchants, and the company will not be allowed to open such offices. The agreement will be ratified when it has been approved by the Chinese Government and the company in Berlin.-P. & T. Times.

PEKING-KALGAN RAILWAY .- Chinese capitalists have applied for a concession to build a railway between Peking and Kalgan, but both the Central Bureau of Railways and Mining Affairs as well as the Board of Commerce rejected the application. Then the Peking Government tried to build the line by itself, and sent a certain high official and a foreign engineer to make a survey and an estimate; but, there being no prospect of getting profit from the line, the matter has now been dropped.-Sin Wan Pao.

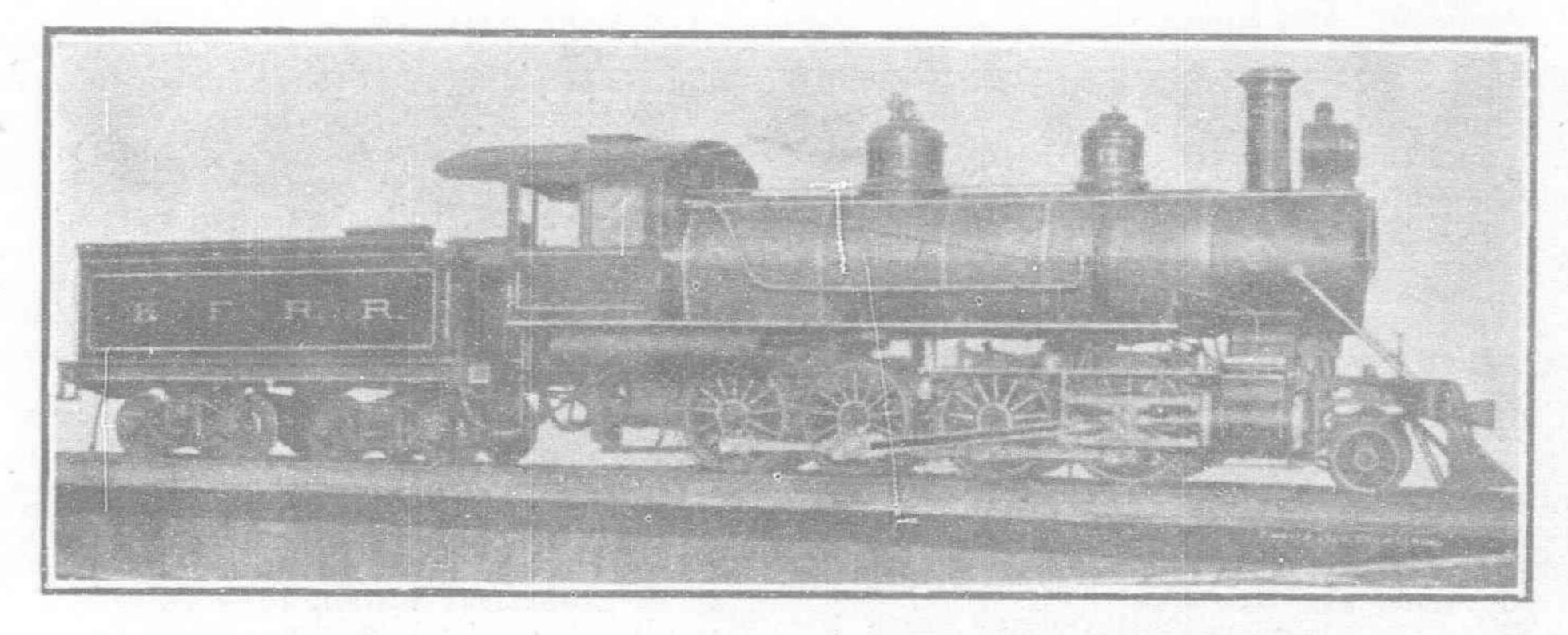
SHANGHAI-NANKIN RAILWAY .- The prospectus of the Imperial Chinese Railways, Shanghai-Nankin Line, has been issued. The issue consists of £2,250,000 Five per cent. Ster-

ling Bonds, part of a loan for £3,250,000 sterling. The principal and interest are unconditionally guaranteed by the Imperial Government of China, and specially secured by a first charge upon the permanent way, rolling stock, and entire property, with the freight and earnings of the railway line to be constructed from Shanghai to Nankin, as well as of the existing railway line between Woosung and Shanghai. The bonds are exempt from all Chinese taxes and imposts, and principal and interest are payable in London in sterling.

THE BAGDAD RAILWAY .- Germany is evidently prepared to pay heavily for gaining a footing in Asia Minor. Failing in her attempt to induce Great Britain to share a part of the burden of the Bagdad Railway, she is slowly realizing that project. The first report of the Bagdad Railway Company, covering the year 1903, has been published, and though it is very early to judge, it is certain that Germany has taken on her shoulders a very difficult and a commercially unprofitable task. The Anatolian Railway, which may be regarded as the first instalment of the Bagdad enterprise, has not had a profitable experience so far. Last year the gross receipts showed no less a decrease than £113,000, or upwards of 25 per cent. A bad harvest and the irritating Turkish passport system made for this sharp decline. Anyhow it indicates sufficiently the difficulty and uncertainty of railway management in the territories of Turkish Asia. The Turkish Government guarantee the Anatolian Railway to the extent of £204,000, and this enabled the company to pay a dividend. In spite of the talk of high finance, the capital of the Bagdad Railway is only £600,000. A German company has the contract to build the first section from Konia, the terminus of the Anatolian Railway, to Eregli. However, this can only be described as a very small instalment, as the cost of the whole railway is estimated at something reaching £20,000,000. So far the shares are divided between German, French, Austrian, and Turkish banks, and no British capital is invested in it at all. The Turkish Government, in consideration of its kilometric guarantee of the line, has received a four per cent loan of £2,360,000, and has set aside a certain number of tithes to the service of this debt.

The expenditure on construction is being defrayed out of the share capital and the interest of the Turkish loan. The balance sheet at the end of last year showed liabilities amounting to £198,000, and assets consisting of £265,000 in hand, and £244,000 representing the value of the line so far constructed. It is difficult at this stage to forecast the success of the Bagdad Railway. The German investors are moving very cautiously, and only a very small proportion of the necessary capital has yet been subscribed. Although the country through which the line is to pass is only sparsely populated, and under present conditions does not promise a commercial success, there is the hope that the valley of the Euphrates will become another Egypt for prosperity and fruitfulness. Germany is making a bid for commercial su premacy in Asia Minor, and the Bagdad Railway is a means to that end. Russia was very disinclined to allow any interference near Persia, but Germany is now in a position to exact concessions or at least neutrality from Russia. There is at the present moment a movement in the direction of reviving British trade in Persia, and there may be a clashing of British and German interests. It will be remembered that Britain very coldly received German overtures towards sharing in the opening up of Asia Minor, and that the Bagdad Railway scheme was severely ignored. It may be possible that the new Anglo-German agreement will change the attitude of the British Government towards Germany's ambitions in Asia Minor. In any case it should make dangerous friction very unlikely .- Englishman.

THE GERMAN SHANTUNG RAILWAY .-- At the general meeting of the Shantung Railway Company, held at Berlin on June 1st, it was



BALDWIN 2-8-0 LOCOMOTIVE FOR JAPAN. (FROM "Locomotive Engineer.")

announced that a cablegram had been received to say that the whole of the line between Tsingtau, Weih-sien, and Tsinan-fu was thrown open to traffic last Tuesday. In the report for 1903, issued by the management, great stress is laid upon the further development of the railway in the following terms:-"Of the greatest importance for the future development of the traffic of the Shantung Railway is on the one hand its connection with sea trade, owing to the German settlement at Tsingtau having entered the ranks of the ports of Eastern Asia, and, on the other hand, its connection with the railway lines in the interior of China."

The report refers to the projected railway which is to be built by the Chinese Government from Tientsin to Tsinan-fu, and thence to Chinkiang, near the mouth of the Yangtse-kiang, with a terminus at Shanghai. At Tientsin this projected line will join the Northern China Railway; this junction will bring about a through line of railway between Peking and Tsingtau, and such a line will be of immense importance during the season in which the navigation of the Gulf of Pechili is closed by ice. "Moreover, at Tientsin the line will be brought into direct communication with the Manchurian Railway by way of Shanhaikwan and Newchwang, and thereby the Siberian Railway will be reached, so that then travelers will be able to go by rail from Berlin to Tsingtau." The receipts of the Shantung Railway in 1903 amounted to 442,239 dollars, and the total expenditure to 289,253 dollars.

BALDWIN 2-8-0 FOR KOREA

Our illustration shows a good example of a Baldwin 2-8-o simple engine, built for the Japanese Government. It will run on the Seoul-Fusan Railway, a standard gauge road which connects the principal cities of Korea.

The cylinders are 20x26 ins., and the driving wheels are 54 ins. in diameter. The whole engine weighs in working order, 137,394 lbs., and with 180 lbs. steam pressure, the calculated tractive effort is about 29,500 lbs., and the ratio of tractive effort to adhesive weight is as I is to 4.17, the weight on the drivers being 123,194 lbs.

The valve gear is indirect, and the main valve used is an ordinary balanced D-slide. The pistons drive on the third pair of driving wheels and the eccentrics are on the axle of this pair. The transmission rod is, therefore, carried back from the link to the lower end of the rocker, which latter comes out between the main and the second driver. The main and the second drivers are not flanged. The spring system is such that the pony truck and the leading drivers are equalized, and the three rear drivers are equalized together. The first two drivers have overhung springs and the last two have springs placed between top and bottom frame bars and also between wheels and back of rear drivers.

The boiler is a straight top one with semi-wide fire-box. The crown sheet and roof sheet are level and there is a steam space of about 20 ins. between them. The boiler is 60 ins. in diameter and the tubes, which are 240 in number, are 13 ft. 10 ins. long. The heating surface is 1,875 sq. ft. in all, of which the tubes contribute 1,727.8 sq. ft. and the fire-box 147.2 sq. ft.

The tender is of the usual type, the tank having a capacity of 4,000 U.S. gallons. The

total weight of engine and tender is about 217,000 lbs. A few of the principal dimensions are appended for reference:

Boiler-Dia., 60 ins.; thickness of sheets, 5% in.; working pressure, 180 lbs.; staying, radial.

Fire-box-Length, 108.3116 ins., width, 41 ins.; depth, front, 60% ins.; back, 58% ins.; thickness of sheets, sides, 5[16 in.; back, 5[16 in.; crown, 3% in.; tube, 1/2 in.; water space, front, 4 ins.; sides, 4 ins.; back, 31/2 ins.

Driving wheels-Journals, main, 8x9 ins.; others, 8x9 ins.

Engine truck wheels (front', dia. 30 ins.;

journals, 5x9 ins.

Wheel base Driving, 15 ft. o ins.; total engine, 23 ft. o ins.; total engine and tender, 50 ft. 7

Weight-On driving wheels, 123,194 lbs.; on truck, from 14,200 lbs.; total engine, 137,394 lbs.; total, engine and tender, about 217,000 · lbs.

THE HONGKONG WHARF AND GODOWN COMPANY, LTD.

An extraordinary general meeting of the Hongkong Wharf and Godown Company, Limited, was recently held at Messrs. Jardine, Matheson & Company's offices in Hongkong.

The Secretary read the notice convening

the meeting.

The Chairman-Gentlemen, this meeting has been called for the purpose of obtaining your consent to an increase of capital, a step which has become necessary in view of our debenture issue falling due for re-payment on 30th September, and to provide funds for further extensions. The financial position of the Company is broadly as follows:-Our real estate property, comprising land and buildings costing \$2,790,367, was, according to a valuation made by the Company's architects two years ago, worth \$4,135,238, and probably if revalued to-day would reach a considerably higher figure. We also possess in wharves, railways, launches, lighters, and machinery, additional assets to the extent of quite \$600,000-making a total of \$4,735,238, and I have little doubt that had we to purchase these properties to-day we should find the cost would not be less than \$5,000,000, which figure, I think, may be taken to represent their minimum value. Our indebtedness is a little under \$1,300,000, so that in round figures the net assets are \$3.700,000. Our proposal is to issue new capital at \$30 premium or \$80 per share, to the extent of \$800,ooo, and we purpose making this issue on 31st December next. You may possibly ask how it is the Board have decided upon this re-arrangement of the Company's finances rather than issue new debentures. Our reasons are that we could not renew the debentures at 51/2 per cent, and possibly not even at 6 per cent, and as the difference between 10 per cent on \$500,000 and 6 per cent on \$800,000 is only \$2,000, we consider the saving insufficient to justify locking up the property by a mortgage deed, especially so in view of the important changes that must take place at Kowloon should the railway, as seems hopeful, become an accomplished fact.

I beg to propose the following resolutions:-I. That the capital of the Company be increased from \$1,500,000 to \$2,000,000 by the creation of 10,000 new shares of \$50 each.

2. That such new shares be issued at a premium of \$30 per share and be offered to

those persons who are registered as shareholders of the Company on 1st October, 1904, in the proportion of one new share for every complete three shares held by them on 1st October, 1904.

3. That the amount due for the new shares be called up on 31st December, 1904.

The motions were carried unanimously.

NEW SPECIE BANK BUILDING, YOKOHAMA .-An excellently well got up booklet, giving a general description and history of the magnificent new building just finished at Yokohama, has been issued by the Yokohama Specie Bank, Ltd. It contains several good photographs of the building from the outside and of rooms inside.

The rooms in the bank are large and airy, while the convenience of customers has been thoroughly studied. The architects of the building are Messrs. Oto Endo and Sakuzo Yorita. Work on the foundation of the building was commenced on March 25th, 1899, and on its completion the construction of the building was begun on December 13th of the same year, the whole of the work being finished in July, 1904.

The building is the result of an attempt to adapt the best features of modern bank buildings of the most advanced type to the requirements of the customs and conditions peculiar to Japan.

The building is located at No. 83 Gochome, Minami Naka-dori, Yokohama. The ground

area of building is 23,217 sq. feet.

The present capital of the bank is 34,000,000 yen, of which 18.000,000 yen have been paid up. The total number of shares is 240,000, of which 60,400 are owned by the Imperiai Household. The reserve fund stands at 9,320,000 yen.

THE INDUSTRIAL BANK OF JAPAN

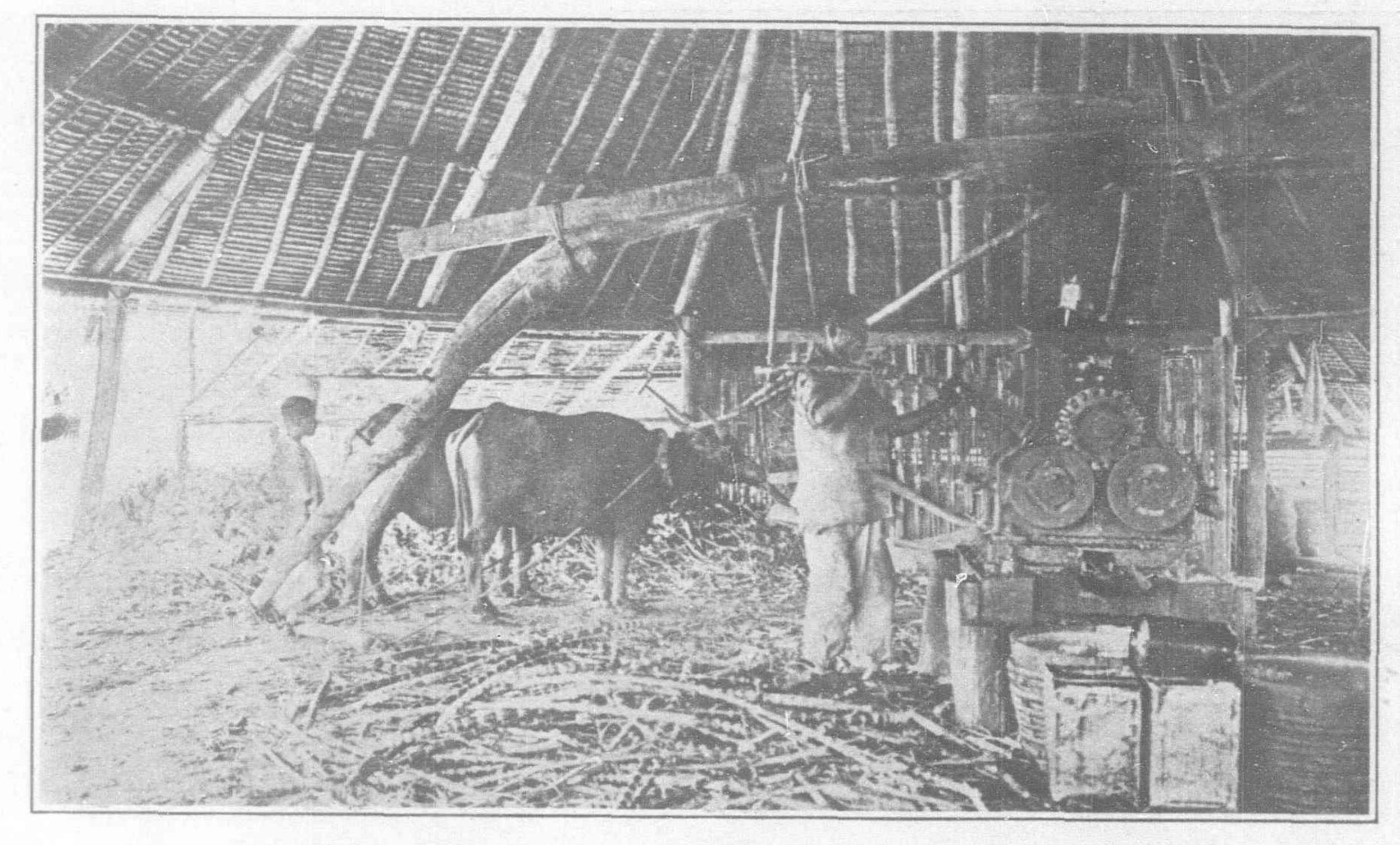
The Industrial Bank of Japan held a general meeting of its shareholders on Saturday. The following balance sheet for the last half-year was presented and approved:-

Net profit ... 96,493 Reserve against losses.... 8,850 Dividend equalization reserve. 2.215 Dividend 62,500 Reward to officers 7,000 Bonus to shareholders 12,500 Carried forward.... 3,428 A dividend for the last half-yearly term at

the rate of 9 per cent per annum was declared. Next, Mr. Soyeda stated that the bank's investments at the end of the period under review amounted to Y10,064,733, including Y4,106,229 and provincial bonds Y3,409,764 in debentures of private companies and Y2,548,740 in various enterprises. The gross profit during the period, added to the sum brought forward from the previous account, amounted to Y435,898, of which Y96,493 represented net profit.

Mr. Soyeda proceeded to say that on January 15th an agreement was concluded between the bank and the Chinese authorities and the Yedamitsu Iron Foundry, by which agreement the bank promised to advance three million yen to the Taya Mining Bureau, China, in three instalments, and this sum was to be repaid, not by that Bureau, but by the Yedamitsu Iron Foundry, which was bound to pay to the bank from time to time the prices of the supplies of iron obtained from the Chinese Bureau in question. The first of the instalments for the stipulated loan was paid on the date of the signing of the agreement, the second on April 15th, and the third on July 15th. To speak more in detail, the transactions consisted in the bank taking up Y3,000,000 worth of the said Bureau's debentures, bearing interest at the rate of 6 per cent per annum and redeemable within thirty years. All the property of the mine, including the railway for the conveyance of ores, rolling stock and other adjuncts, was offered as security.

With regard to the conclusion of the above agreement, Mr. Inouve, one of the bank's directors, was despatched to the mine, which he personally inspected. As the result of the investigations, negotiations were carried out between Mr. Inouve and Shang Suen-hwai, superintendent of the Hupeh Ironworks, to which the Toya Mining Bureau belongs.



"THE MENACE TO THE SUGAR INTERESTS OF THE UNITED STATES."

A MODEL UP-TO-DATE PHILIPPINE SUGAR FACTORY. NOTE THE SWIFT MOVING CARABAO AND THE DEXTERITY WITH WHICH EACH INDIVIDUAL CANE STALK IS CAREFULLY FED INTO THE MILL BY HAND. CAPACITY ABOUT 2 TO 5 TONS OF CANE IN 24 HOURS, ACCORDING TO THE ENERGY OF THE MOTIVE POWER.

THE MODERN CANE CRUSHING MILL

Great strides have been made in recent years in the construction of cane crushing mills and in the efficiency of their work. The development from the old set of rollers moved by animal power to the modern nine and twelve roller mill and engine has been gradual. When the large single three roller mills were first operated, it was thought that the limit had been reached; but, with the addition of

two or three more mills, hydraulic pressure, and the shredder or crusher, greater results were obtained in proportion, until at the present time the maximum grinding capacity and efficiency has been reached by the employment of the nine roller mill and crusher.

The work performed by a single three roller mill of the average size, as employed in the smaller sugar factories, with rolls of say 66 inches long by 28 inches in diameter, grinding 25 tons of cane per hour, with the juice at a density of about 9° Baumé, will average in extracting from 65 to 69 per cent of the weight of the cane in juice.

When it is considered that the majority of the muscovado estates, such as exist in the Antilles and here in the Philippines, operate with still smaller and less powerful mills, many by animal power, it will be readily understood that, if 50 per cent of the weight is secured, fairly good work is accomplished.

In proportion as the pressure is increased, and further mills added, the extraction is increased, until, with the combination nine roller mill and crusher depicted on this page, the maximum efficiency is obtained by an extraction of from 90 to 94 per cent of the sucrose in the cane, or from 80 to 84 per cent of its weight.

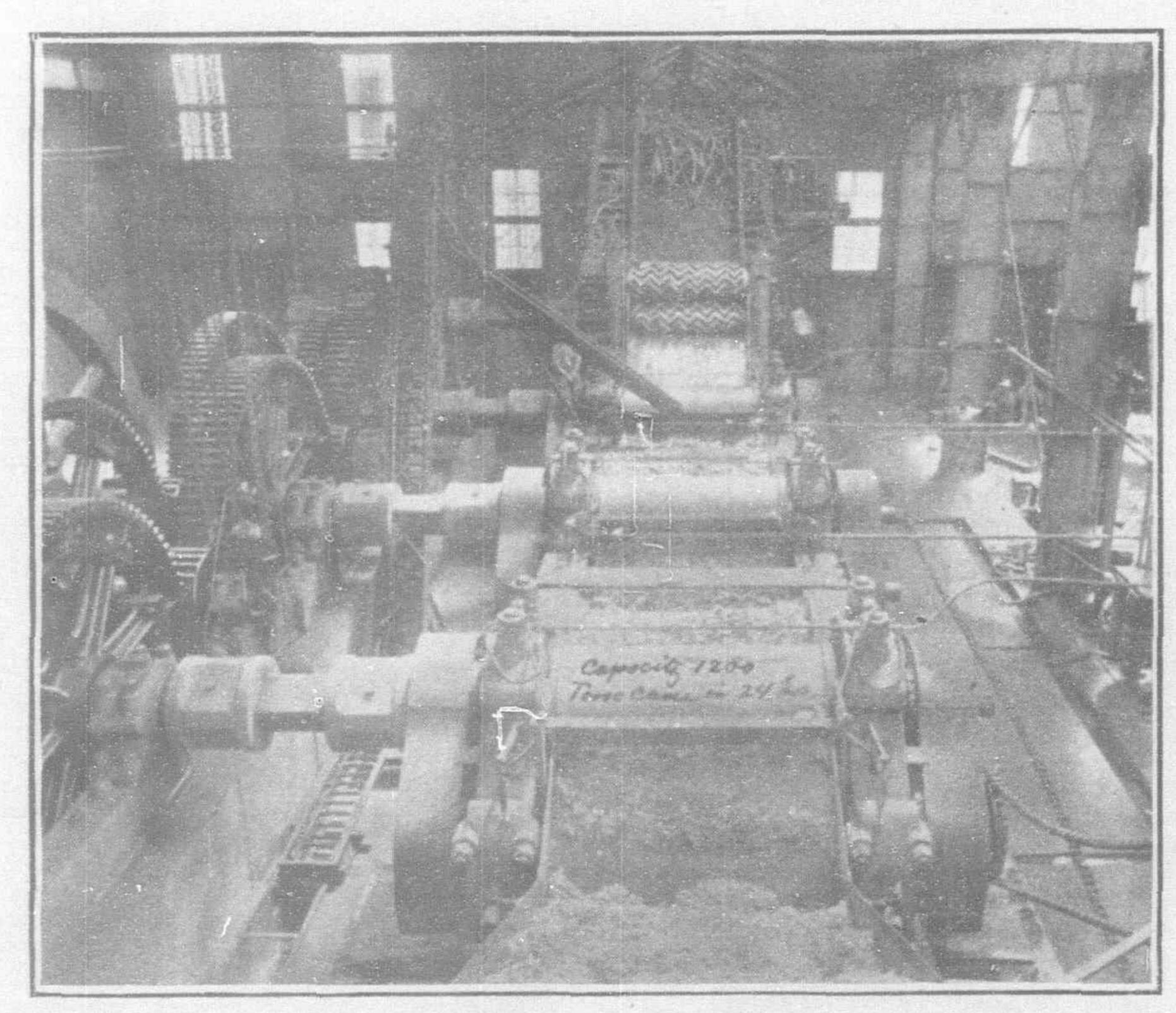
In a few instances the cane has been run through still another mill, but it is doubtful whether the result obtained of an additional two per cent is commensurate with the outlay of capital.

The mills illustrated are of the type in general use throughout the Hawaiian Islands, from the works of the famous Honolulu Iron Works.

The type is peculiar to the Islands, where it was first tested and developed. Triple crushing has long been practiced in Cuba, but the mills are separate units moved by independent engines. This method still has the lead in Cuba, owing largely to the fact that nearly all the factories have developed gradually from the old style muscovado house, with one mill and vacuum pan, by the addition of a new mill or evaporating apparatus, as the circumstances of the owner would permit. In Hawaii, on the contrary, nearly all the factories have been built up new according to set plans, and it was early seen that one engine geared direct to the three mills would give better results than three independent engines, in addition to a great economy in cost.

To this combination was later added the crusher, also geared to the main engine, thus increasing the capacity at least 25 per cent.

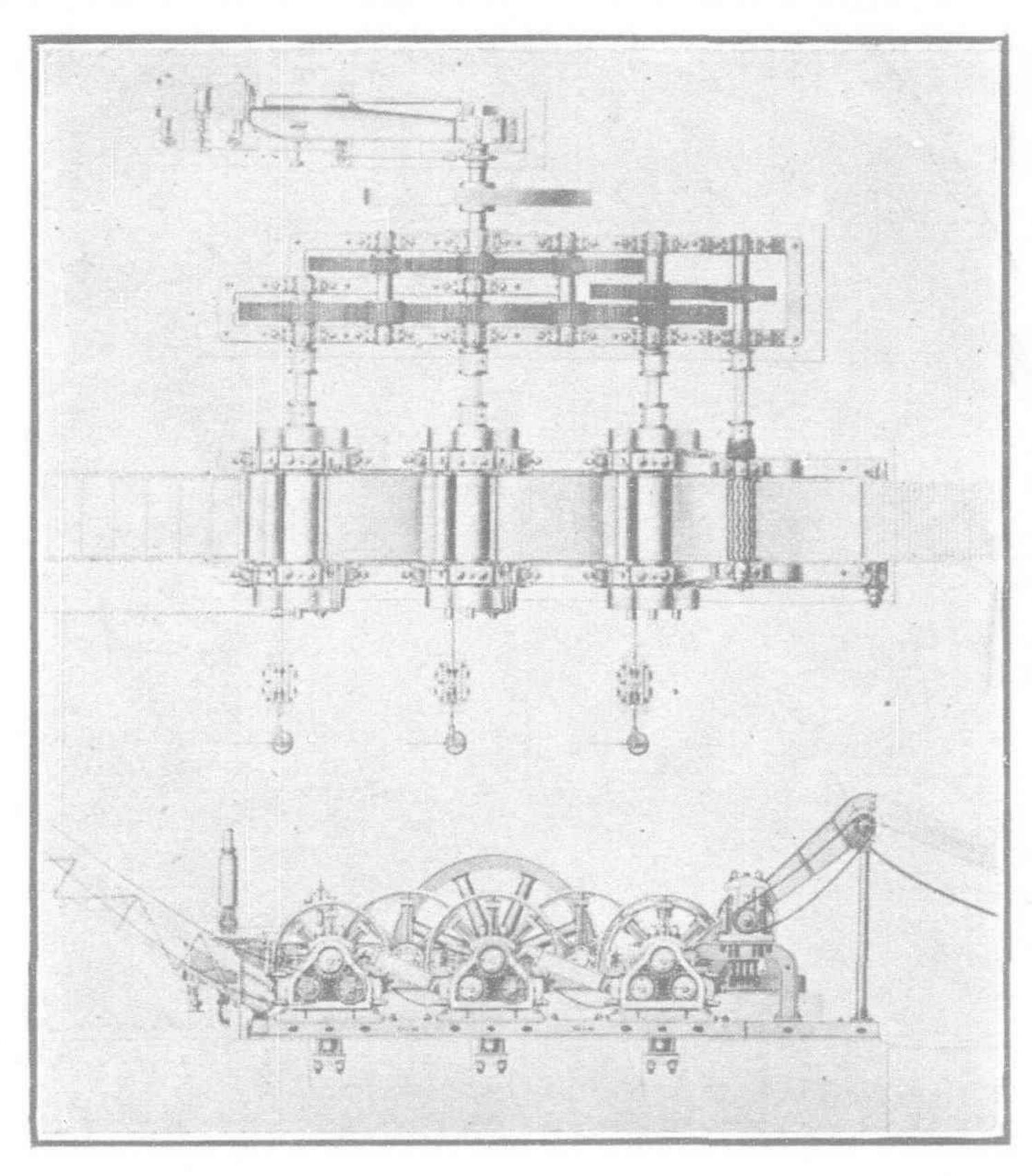
The maximum efficiency in extraction is secured by the use of a nine roller mill, whether in a single or separate units, and the crusher simply prepares the cane so that the rolls can take more and increase the capacity.



"THE MENACED INDUSTRY."

A MODERN NINE-ROLLER MILL AND "KRAJEWSKI" CRUSHER, IN OPERATION IN HAWAII, LOUISIANA,
AND CUBA. THE CANE IS SEEN ENTERING THE HOPPER OF THE CRUSHER IN THE UPPER
PART OF THE PICTURE, AND THE BLANKET OF CRUSHED BAGASSE ISSUING
FROM THE THIRD MILL ON ITS WAY TO THE FURNACE.

CAPACITY 1200 TONS OF CANE IN 24 HOURS.



PLAN OF NINE ROLLER MILL AND KRAJEWSKI CRUSHER.

In the type of mills shown in the illustrations, it is demonstrated by the report of the Ewa Plantation Co.—operating the largest cane sugar factory in the world—that the average extraction for the crop, extending over 197 days, and grinding an average of 1400 tons of cane per day, was 94 per cent of the total sugar, and 83.65 per cent of the cane.

The average tons of hydraulic pressure on the mills was as follows: crusher, 150; 1st mill, 370; 2nd mill, 399; and 3rd mill, 416.

The result of this fine initial grinding is shown by the return in sugar after passing through the different stages of manufacture, in yielding 13.31 per cent of sugar to the weight of the cane, or more than double the yield from the small steam mill and open trains as employed in the Philippines, and 50 per cent more than can be secured with a mill having an extraction of $65^{0}/_{0}$ in combination with triple effect and vacuum pan.

The average muscovado estate, working with a steam mill and open kettles, will not exceed a yield of six to seven per cent in sugar to the weight of the cane, and the product a very low one in polarization, at the best not over 89, and frequently as low as 82 degrees.

The single mill, extracting about 65% of the juice, in combination with a fairly modern house, including multiple effect evaporators, vacuum pans, and centrifugals, with the juice averaging 9½ degrees Baumé, will, under favorable conditions, average a yield of about 8½ per cent of first sugars polarizing 96 degrees, and 1½ per cent of molasses sugars, or a total of about 10 per cent of the weight of the cane.

After a well-equipped boiling house is installed, any further increase in yield must come from an increase in the supply of raw material or juice, and this is only obtained by ample crushing power, the highest type of which is embodied in the nine roller mill and engine.

There are some plants in the Philippines and the Far East which, if taken in time, could be enlarged and built up so as to secure at least double the output now realized.

They would naturally be of small capacity, but the increased yield would soon pay for any outlay of capital invested.

Giving a plant with a fair three roller mill and sufficient boiler power, in connection with an open battery, the addition of two or three defecators, clarifiers, scum tanks, two filter presses, a small six foot vacuum pan, and two centrifugals, the whole not exceeding in cost \$10,000 gold, would place it on a basis where its yield would be increased 40 to 50 per cent, in sugars having a market value of at least one half a cent more to the pound. A few such second rate plants in the Philippines would do much towards infusing new life in the industry, and pave the way towards better times and larger plants in the future.

HAWAIIAN SUGAR COMBINATION

HONOLULU, July 18.

Incorporated under the law of the Territory of Hawaii is the Sugar Factors Company, Limited, a new organization, the creation of which came as a great surprise. It practically merges the interests of all of the sugar-growers in the Hawaiian Islands, with the exception of the Spreckels holdings. The shareholders are the planters and millowners represented by the following firms:-H. Hackfeld & Co., T. H. Davies & Co., C. Brewer & Co., Castle & Cooke, Alexander & Baldwin, F. A. Schaefer & Co., the B. F. Dillingham Company, and Hind, Rolph & Co. Other smaller sugar concerns are also understood to be interested. The capital stock is \$3,000,000, and ten per cent. of this was paid in at once.

The main object of the new combination is to handle and dispose of the Hawaiian crops, which seems simple enough in itself, but the new organization has also the right to go into the refining business, should it be so inclined. This right, if put into operation, would, of course, put it in direct antagonism to the sugar trust.

The officers of the new combination here are:

—President, H. A. Isenberg; first vice-president,
E. D. Tenney; second vice-president, T. Clive
Davies; secretary, C. M. Rolph; and treasurer,
E. F. Bishop.

CEBU HARBOR IMPROVEMENTS

One of the first public improvements to claim the attention of the Insular Government was the provision for better harbor and shipping facilities for ports of the archipelago.

Next in importance to Manila are the ports of Iloilo and Cebu, but the facilities for han-

dling cargo are primitive and expensive, and constitute a serious check to their development. The harbor of Cebu is in the channel separating Mactan Island from Cebu proper, and affords a good anchorage and protection against typhoons.

The Insular Bureau of Engineering, under the supervision of J. W. Beardsley, completed surveys of these harbors and drew up plans for their improvement. In Cebu the project includes the construction of a concrete masonry dock and bulkhead about 2,600 feet long, the reclaiming of about 13 acres of land adjacent to the already congested business portion of the city, and provides for dredging a channel for vessels of 23 feet draft, and for future extension of docking facilities when needed.

Method of construction.—At a point nineteen feet back from the face line from the masonry wall there will be driven a parallel line of piles spaced seven feet, center to center, to the depth of twelve feet below the excavated bottom of the finished channel, or until a penetration of not more than two inches is obtained under the last five blows of a 2,500-pound hammer falling ten feet.

Every fifth pile is to be of first quality Dungon, or other hard wood, driven to a penetration of fourteen feet and extending to an elevation of fourteen feet above the datum plan. The tops of these piles are to be finished off as snubbing posts.

On these piles will be bolted a waling strip six inches by twelve inches, at about one foot above low water, and a similar strip bolted as close to the bottom as feasible.

Against these strips will be driven a line of four-inch sheet piling, to a penetration of eight feet below the proposed excavated bottom of the channel, and to the elevation of the top waling strip.

On the completion of this bulkhead a trench extending out from the bulkhead and having a bottom width of at least 8 feet beyond the toe of the concrete pier wall will be dredged to the grade line of the finished channel and will be filled in with gravel from the Guadelupe River to a grade of I foot below the top of the pile foundation, as shown upon the plan.

Foundation pile.—Parallel to the bulkhead and at a distance of three feet, center to center, will be driven four lines of piles spaced on line perpendicular to the bulkhead until a penetration of not more than two inches under the last five blows of a 2,500-pound hammer falling fifteen feet. The top of the piles are to be cut off at grade.

as shown, gravel is to be deposited between them and over the area of the trench and struck off level with the top of the piles by divers; on these piles a section of the grillage will be sunk. The grillage will be constructed of 10 by 10 inch timber, securely driftbolted to the foundation piles. The spaces in and below the grillage are to be then filled with concrete placed in burlap bags or deposited in sites by means of a chute.

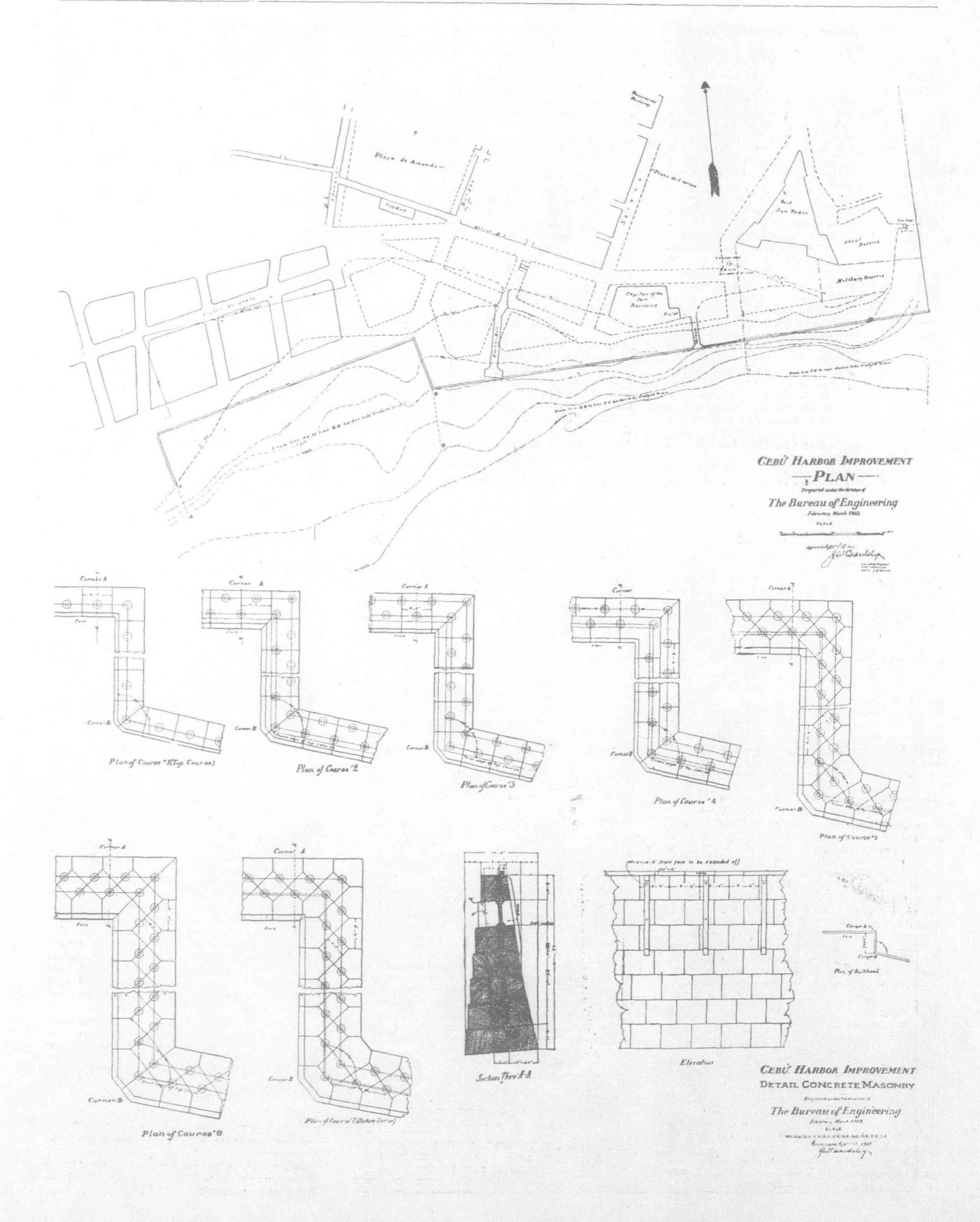
Masonry.—The concrete pier wall will consist of concrete blocks of the shape and dimensions shown upon the plans, including special blocks for the turning of corners or angles.

Riprap.—Before the completion of the pier wall, there will be placed alongside and adjacent to the face of the pier wall riprap extending to the top of the base block and having a slope of one vertical to two and one-half horizontal, placed and leveled by divers.

Dredging.—Is to be prosecuted over the areas and to the depths shown on the plans, and all material for the dredge channel is to be deposited as back filling, back of the timber bulkhead, and carried to the present street line along the water front and to the elevation of ten feet above datum.

The contract for the work was awarded to J. G. White & Co., of New York, London, and Manila, and active work has already commenced.

Some 30,000 barrels of cement will be employed in the construction of the concrete blocks, and other requirements of the work.



ILOILO HARBOR IMPROVEMENT

The improvements of this port, while not on such an extensive scale as that of Cebu, are just as important to the development of the city. The harbor ranks next to Manila, and the greatest traffic is on the Iloilo River, which empties into the channel separating the islands of Panay and Guimaras. Vessels drawing 12 feet can enter the river at high tide and handle cargoes at the very poor dock. Deeper vessels are compelled to anchor in the channel about a mile from town, and load and discharge by means of lighters.

The work under contract will consist in—

(A) Building pile, brush, and stone dikes

where shown on the map by heavy solid lines.

(B) Building two rubblestone jetties where shown on the map by heavy checkerboard lines.

(C) Dredging a channel, as shown on the map between dashed lines, to a depth of 15 feet below mean low water, and having an average width of 350 feet at grade.

(D) Building so much of a wharf as the appropriation will permit, after completing the work A, B, and C. The wharf to be at some point in front of the city of Iloilo between the present Custom House wharf and Point Llorente.

Dikes are to be built in the following order: F to F'; G to G'; A to X; N to M, and L to X. The smaller dikes, H, I, and K, and any others that may be needed to close openings from the flooded area south and east of the river and town.

Along the center line of these dikes a line of piles spaced 6 feet, center to center, are to be driven to a penetration of at least 10 feet, and then cut off on a grade of 10 feet above the line of low tide.

Fascines are to be built of live, sound brush of not less than 14 feet length, and having a diameter of about 2 inches at the butt, forming compact bundles of about 12 inches in diameter.

Mattresses are to be constructed in the following manner: Along both sides of the piling will be placed a sapling of not less than four inches in diameter. A row of fascines, bound to the sapling and to each other with galvanizediron wires passing completely around each fascine, shall be laid compactly together between

the piles, and perpendicular to the alignment, and extending equally on each side. On this layer at right angles will be laid another similar layer, the fascine work to have a width of at least 14 feet for all layers parallel to the line of piling. In this manner, by alternating layers, perpendicular and parallel to the line of piling, the mattress is to be built up until its top shall stand at an elevation even with the plane of high water after compression by the rock.

Rock shall be piled on top of the mattress to compress it. One and one-half tons of rock will be required to a running foot of dike.

Rubblestone jetties (or mounds) of the dimensions shown on drawings are to be built between the points D and E and A and B.

Dredging.—Between the lines, as shown upon the map, the area is to be dredged to a depth of 15 feet at low tide and the dredged material deposited behind the dikes so as to form a levee at least 50 feet wide and level with the top of the dike.

THE RAUB MINES

Towkay Loke Yew has come to the rescue of the Raub Australian Gold Mining Company. He has (says the Straits Times) in short guaranteed the Company with a Singapore Bank. The Company was indeed in sore financial straits when the Towkay stepped forward to back it. Mr. John Anderson also helped in the rescue work. How matters stand was clearly explained at the annual meeting of the Company held at Brisbane on the 16th June, with Mr. De Burgh Persse in the chair. The chairman said that he thought the shareholders had every reason to feel satisfied with the results as shown by the figures presented, and which were largely due to the able manner in which affairs had been conducted by the general manager (Mr. C. C. Warnford Lock), aided by the advice and assistance of the local board at Singapore. The main feature of last year's proceedings had been the decision of the directors, on the advice of the general manager, to enter into an agreement with the Government of the Federated Malay States to sink a shaft 1,500 ft. deep to test whether gold

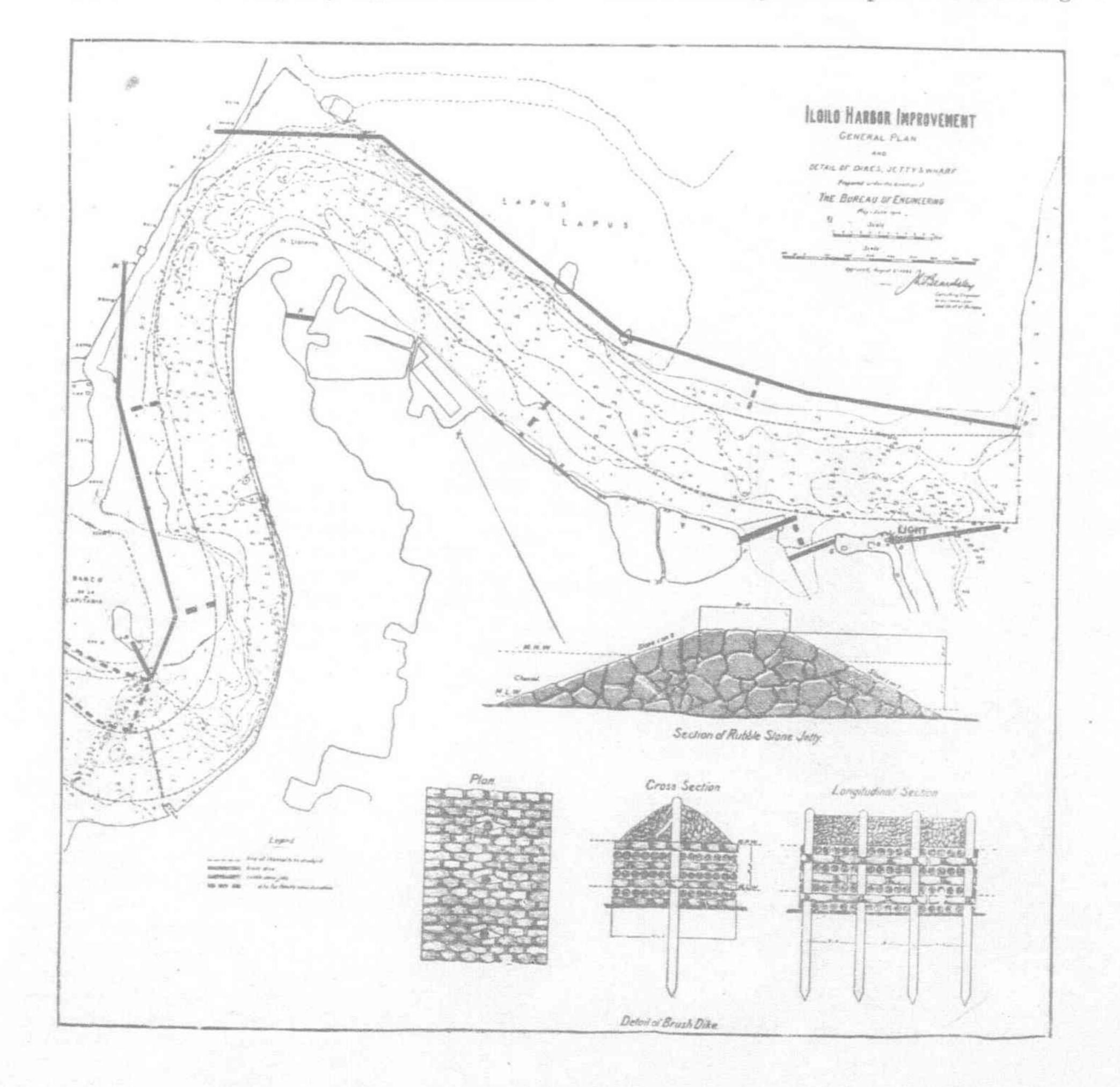
exists at the deeper levels, and which on the general manager's assurance there is every reason to believe will result favorably. The agreement with the Government, amongst other stipulations, contains one with regard to the financing of the cost of sinking of the shaft. The Government of the Federated Malay States have agreed to expend pound for pound up to 150,000 dollars, conjointly with the Company in sinking this shaft, but stipulate that they will only do so when they are satisfied that the Company are prepared to set aside and ear-mark their proportionnamely, 150,000 dollars-for this special purpose. . . . Mr. John Anderson, chairman of the local board in Singapore, and a very large shareholder, had taken infinite pains to bring matters to a satisfactory conclusion, but had only been able to do so finally by giving the personal guarantees of himself and Towkay Loke Yew, one of the largest merchants of Singapore (as a backing to an advance to the Company), to the Chartered Bank of India on the Company's behalf. It will be necessary to protect these gentlemen who have undertaken this large liability, and it was resolved that the directors be authorized to give a debenture for the amount of £15,000 to Messrs. Anderson and Loke Yew in connection with their guarantee to the bank.

FRENCH INDO-CHINA

Planting enterprise is looking up in French Indo-China. Among other staples, rubber, which is readily obtainable from wild plants which grow over wide areas, is a profitable commodity, and its production is rapidly increasing. Europeans are experimenting with the cocoa tree. A large industrial house in France, says the Hongkong Morning Post, is carrying out a project for the cultivation of ramie and jute on a large scale in Tonquin, and a concession of 7,400 acres has been granted in Cochin-China to a European for the cultivation of the first-named. Over 1,000,000 lacquer trees have been planted, and a vanilla plantation is prospering near Hanoi. Europeans are also experimenting with camphor trees, which are said to grow well in Upper and Mid-Tonquin. It will thus be seen that considerable attention is being paid to planting by French colonists and natives, who receive every encouragement and scientific assistance from the Government at Hanoi. Railways are rapidly spreading over Tonquin and connecting the various centers The telegraph lines erected to serve the railways in 1903 cover a length of 560 miles. The total length of the telephone wires is 140 miles. The total receipts of the Customs and Excise in 1904 are estimated at \$27,000,000. In 1899 they were \$17,000,000. The cost of the French staff engaged in working the services averages 734 to 814 per cent of the total receipts, which is very moderate. Harbor and warehouse dues in 1902 yielded \$955,000; native alcohol, \$1,782,000; opium, \$3,892,000 during the first half of 1903; salt regie, \$1,260,000 in the same period; administration of justice, same period, \$330,000; and the expenditure to \$360,000. The receipts from posts and telegraphs during the first half of 1903 were \$1,970,000, against an expenditure of \$1,400,000, but charges on official messages not included would have brought in another \$420,000. The estimates for 1904 amount to \$48,208,000, which may be reduced by \$1,000,000

ELECTRIC STREET RAILWAY, MANILA.— Milliken Brothers, of New York City, have secured the contract for the steel to be used in the construction of the central power station for the Manila electric lighting and traction system.

CHINESE RAILWAYS.—PEKING, Aug. 4.—A Belgian syndicate, after consulting with some Chinese merchants, has asked the Chinese Foreign Office to be granted the right of laying down a railway from Shanghai to Nanchang, Chiangsi, and Changchau, Hunan.



CONSTRUCTION AND ENGINEERING NEWS

OBITUARY

Mr. Harold Clarke, junior partner in the firm of Consulting Engineers, Messrs. Carmichael & Clarke, Hongkong, after lying ill in the Civil Hospital for nearly a week with typhoid, following an attack of pneumonia, died on the 18th of August, aged 32 years. Mr. Clarke was a Liverpool man, formerly on the steamers Knight Companion and San Cheung. He was married and began business about eight months ago. He was a popular member of the community, and his untimely demise is regretted by numerous friends. The funeral was largely attended, and much sympathy was expressed for the young widow. Mr. Clarke was a young man of quiet disposition and greatly liked by those who had business or friendly dealings with him.

PERSONAL

Mr. L. M. Bell, M. I. C. E., assistant Municipal Engineer, Singapore, has been unanimously elected Municipal Engineer for the city of Penang. As we got our present Municipal Engineer, Mr. R. Peirce, from Penang, and the northern municipality have had the late Mr. Sam Reid and now Mr. Bell from Singapore, the two places are perhaps quits. The last appointment is a matter of congratulation as regards Penang, but we shall miss Mr. Bell, who has been in charge of the water deportment here during Mr. Peirce's leave, and had water experience of one of the largest waters schemes in London.—S. Free Press.

Mr. W. G. Winterburn, M. I. N. A., Manager of G. Fenwick & Co., Ld., Hongkong, has been elected a Vice-President of the Institute of Marine Engineers, London, Eng., for the ensuing year.

Mr. Fitz William has succeeded the late Mr. Swan as Manager at the Tua Mines.

Mr. G. N. Cochrane is appointed an Assistant Surveyor on the Negri Sembilan Railway Extension, and Messrs. B. A. Starling, F. R. Twiss, and T. H. Darbyshire in a similar capacity on the Johore Railway Survey.

Mr. H. E. Nicholls has been appointed General Manager of the Malaysian Company in Pahang in succession to the late Mr. R. M. W. Swan. The company is engaged in gold mining by hydraulic process at Sepan, about 20 miles from Lipis, inland off the Trunk Road at Benta.

A combination of all the Public Works Departments of Perak, Selangor, Negri Sembilan, and Pahang has been effected as from the 1st inst., under one head, the Director of Public Works, Federated Malay States, and a new scheme for the grading of officers in the service has been published.

Mr. Leonard M. Cox, Civil Engineer, U. S. Navy, Supervising Engineer, Construction of Steel Floating Dry-Dock for Cavite, P. I., has been ill for the past two weeks at the Presbyterian Eye, Ear, and Throat Hospital, Baltimore, Md.

The Provincial Supervisors of the Philippines met during the month at the Engineering Bureau, and discussed various plans for a standard system of road building and repairing, and other important matters connected with the prosecution of public works.

Mr. Kendal has been appointed Consulting Railroad Engineer to the Commission. He leaves this month on a trip to the United States in connection with his new duties. Mr. Kendal recently completed a survey for a new line in one of the southern islands.

News has just been received from New York, appointing Captain C. W. Mead, Engineer in Chief and General Manager of the American China Development Company, Canton-Hankow railway; putting him in charge of all departments, both in Shanghai and Canton, filling the place of Mr. Willis E. Gray. Captain Mead's valuable services to the company have been justly recognized and appreciated by the New York Office and the Board of Directors. The engagement of Captain C. W. Mead to a charming Shanghai girl, Miss Beatrice Ziss, is also announced.—N. C. Daily News.

ELECTRIC LIGHT, POWER, AND TRACTION

LIGHT RAILWAYS FOR BURMA .- When opening the Mandalay Electric Tramways, the Lieutenant-Governor alluded to the undoubted fact that there are several places in Lower Burma where short lines would pay remarkably well. His Honor said he was considering the advisability of offering guaranteed dividends from District Funds for such a purpose, as had been done in India. The advantages to Government and people from improved communications are so great that we hope Sir Hugh Barnes will advertise particulars of the lines he wishes to have constructed with the guarantee that District Funds could give, and we feel sure he would soon find capitalists willing to undertake the work.—Indian Engineering.

RANGOON ELECTRIC POWER SCHEME.—The negotiations relative to the license for the electric lighting and traction in Rangoon are now completed. The Municipality have done their part and Government have, with commendable promptitude, completed their task, and it now rests with Messrs. Darwood & Company to show that private enterprise can give points to the Municipality or the Government in the matter of expedition and thoroughness in large public works. It is hoped that the work will be put in hand by November, and no time will be lost in installing the electric light and traction. Unusual interest attaches to the venture from the fact that the present steam tramways were constructed by the late Mr. J. W. Darwood, whose family are the concessionaires for the new system.—Indian Engineering.

MESSRS. DARWOOD & Co., RANGOON.—The push and enterprise that characterize the operations of this firm are notable even in such a progressive province as Burma is known to be. The local newspaper reports that they are securing the concession for laying an Electric Tramway from Moulmein to Mupun, which has all the promise of a most successful undertaking.

ELECTRIC POWER, MADRAS.—Messrs. Crompton & Co., Ld., Electrical Engineers and Contractors of London, have applied to the Madras Government for a license for the supply of electrical energy to the public throughout the municipal area of Madras and the area vested in the Trustees of the Harbor of Madras.

HANJIN ELECTRIC RAILWAY, KOBE.-The Hanjin Electric Railway Company (Kobe to Osaka) has applied to the Hyogo Kencho for a charter to extend its line to a part of Kobe City from the terminus at Kumoi-dori, 8-chome, Fukiai. The company proposes to extend the line from the terminus to the northern end of the Recreation Ground by way of Kano-cho, thence turning to the right and proceeding along Ura-machi, and then to the left at the corner of Kyo-machi, whence the line would continue through the same street to the Bund. After reaching the Bund, the line would turn to the right and proceed to the American hatoba. For the return journey, in order to avoid a double line, it is proposed that the route should be along Division Street, turning into Uramachi at No. 43, and joining the double-track at the corner of Kyo-machi. The length of this line proposed to run through the city is about 83 chains, and the cost of laying it is estimated at Y166,000. The application has been submitted to the Kobe Municipal Assembly.—Kobe Chronicle.

Seoul Electric Company. — The Korea Daily News is informed that on the 1st August, the entire electric property, heretofore operated under the name of the Seoul Electric Company, will be transferred to a new corporation named the American Korean Electric Co., and will thereafter be operated by this new company. The American Korean Electric Co. is an American Company, incorporated under the laws of the State of Connecticut, and the stock is held, one half by his Majesty the Emperor of Korea, and the other half by H. Collbran and H. R. Bostwick, American citizens.

ELECTRIC LIGHTING, LUCKNOW.—The terms on which the concession for the introduction of electric lighting and traction in Lucknow had been offered by the Municipal Board have been substantially accepted by Messrs. Kincaid & Co.

ELECTRIC LIGHTING, SYDNEY.—The city was electrically illuminated for the first time July 28, without the assistance of the gas lamps. The resident engineer (Mr. T. Rooke) states that the system is now in perfect working order, but some slight inconvenience is being experienced owing to the staff not yet having become thoroughly acquainted with the machinery, which is of a modern and intricate character.

ELECTRIC STREET RAILWAYS, SYDNEY .- David Kirkcaldie, one of the railroad commissioners of the New South Wales Government, whose department has the supervision of constructing the extensive electric traction system in Sydney and suburbs, is now in New York, mainly with a view to getting pointers for the extension and operation of the Sydney lines. Mr. Deane, the Engineer-in-Chief of the New South Wales Government Railroad and Tramway Department, is also on a trip to the States at present. Some large contracts for equipment, etc., are expected to be secured as a result of their visit. The Sydney system's powerhouse is practically entirely installed with American machinery, the General Electric Co. having secured contracts aggregating upwards of \$1,000,ooo. The contract for the steel used in the construction of the powerhouse was awarded to the American Bridge Co.

THE CARRINGTON TRAMWAY, N. S. W .- With reference to the resumption of the work on the Carrington tramway, the N.S.W. Works Department state that the line is now to be completed, and the total cost, including an overhead bridge, will be about £8000. Authority to continue the work was given last month. The construction was stopped owing to a dispute between the Carrington Municipal Council and the Government with reference to the site for an overhead bridge. In consequence of this dispute, the bridge materials, which had been imported, had to be stored in the Works Department, and it was with a view to utilizing the material that tenders had now been called for its erection at a cost of about £1300.

KOBE TRAMWAY QUESTION.—At a meeting of the Kobe City Assembly held recently, the application of the Han-jin Electric Tramway Company for the construction of a line in a part of the city was discussed. It was decided to grant an appropriation of Y2,500 for the purposes of investigation.

At an extraordinary meeting held later, after a long discussion, the Assembly agreed as to the necessity of such a railway, and decided either to allow some trustworthy company to construct it or to undertake the work at the City's expense. They decided at the same time not to grant the application of the Han-jin Electric Tramway Company for permission to construct a railway in a part of the city only.

An application for permission to construct an electric tramway in Kobe was again sent in to the City Office by Messrs. Ikeda Kwambei, Hamada Tokusaburo, Kajima Hidemaro, Sawano Sadoshichi, Egawa Kumpei, and some others, and was at once submitted to the City Assembly.

According to the promoters of the scheme, the cost of construction is estimated at Y120,000, and the length of the line is as follows:—

One mile thirty chains north of Hiogo, one mile fifty-eight chains in Yamate-dori, one mile fifty-four chains south of Hiogo, one mile fifty-eight chains in Kitanagasa-dori, and a branch line of seventeen chains extending to Sakae-machi; that is, six miles fifty-seven chains in all.—Kobe Chronicle.

THE CAUVERY POWER SCHEME, INDIA.-In a long order just issued on the progress of the Cauvery Power Scheme, the Maharaja of Mysore says that the supply of electrical power to the Kolar Gold Mines having been in successful operation for more than a year, the time is ripe for taking stock of the results achieved, and for reviewing the whole enterprise in its several aspects. After referring at some length to the history of the scheme, which is regarded as the pioneer enterprise of this nature in India, and an advance in the matter of distance over which power is transmitted on any other scheme in the world, the order discusses the results achieved, as compared with forecasts on the first installation. An excess of 500 horse-power, or more than 12 per cent over and above the 4,000 horse-power contracted for with the mines, is available. This slight excess will be more than counterbalanced by the saving on the second installation now in course of erection. The net profits on the first year's working of 31.86 per cent are probably unparalleled, and the forecast for future years indicates very clearly the remarkable value of the property. When the second installation is complete £438,434 will have been spent from funds actually available, and without recourse to borrowing. In return a net profit of £505,600, or more than the cost of the installation, is assured in the first five years, while the probable profit in the first nine years amounts to £700,000. All the demands of the mines will have been met, and a surplus of over 1,000 horse-power will be available for electric lighting or industrial use in Bangalore or elsewhere. The life of the gold mines, the order says, cannot, of course, be foretold, but at the worst the capital will have been recouped, and experience all the world over shows that available power has never yet lacked a purchaser. In conclusion, after thanking the various officers engaged on the work, his Highness desires to place on record his sense of the pre-eminent services rendered by Major Joly de Lotbiniere, R. E., as the originator and elaborator of the scheme and as its untiring negotiator in India, Europe, and America.

ELECTRIC LIGHT FOR KABUL.—ALLAHABAD, July 14.—Mr. Donovan, an electrical engineer, left Peshawar for Kabul on the 9th instant. The Amir has the intention of running his arms factories and other workshops by electricity and of lighting Kabul City.

ELECTRIC LIGHTING FOR LUCKNOW.—LUCKNOW, July 5.—At a recent meeting of the Municipal Board for Lucknow it was stated that a letter had been received from Messrs. Kincaid & Company, substantially accepting the terms on which the concession for the introduction of electric lighting and traction here had been offered. The meeting approved of the proposals of the sub-committee appointed to look into the matter, with the exception of the clause dealing with the fares, the Board being of opinion that the maximum charge of one anna per mile for first class and half an anna for second class should not be exceeded without sanction.

PROPOSED TRAMWAY LINES, INDIA.—CAL-CUTTA, Aug, 13th.—A special general meeting of the Commissioners of the Cossipore-Chitpur Municipality and of the representatives of the local Mills and Factories was held recently to consider an application for permission to apply to the Local Government to sanction the construction of an Electric Tramway within the Municipality and to consider another application from the Calcutta Tramways Company, Limited, asking for permission to lay a double line of Tramways from the Chitpur Bridge to Baranagar. After some discussion the Calcutta plan was accepted.

ELECTRIC POWER SCHEME.—SIMLA, Aug. 13.—The report of the Committee on the Water Supply and Electric Power scheme for Simla has just reached the Government of India in the Public Works Department. The adoption of the project recommended will involve an expenditure of ten lakhs of public money.

DUNEDIN, N. Z., POWER TRANSMISSION.—
The tender of the Dunedin, New Zealand, Engineering Company has been accepted for the pipe line to be laid for the purpose of conducting water from Waipori Falls to the power house, in which it is proposed to generate energy for transmission to Dunedin and surrounding district.

TAKATA & Co., MINING LOCOMOTIVES, JA-PAN.—Eight mining locomotives, together with considerable other electrical equipment, will be shipped from the Westinghouse works at East Pittsburg to Japan. The locomotives, etc., are intended for the Besshi mines. The contract was placed through the Japanese house of Takata & Company which firm represents the Westinghouse interests in Japan.

POWER TRANSMISSION SCHEME, MADRAS. -The Madras Government is about to apply to the Mysore Durbar for the loan of the services of Major Joly de Lotbiniere, C.E., for a few months in connection with the scheme for the utilization of the water power at Teriyar dam for generating electric current, it being proposed to ascertain whether it is possible to conduct electric power from the dam to Madras city for electric lighting and power transmission purposes. The distance from the dam to Madras city is 300 miles. Major de Lotbiniere acted for the Mysore Government as the chief engineer in the construction of the Cauvery Falls power transmission system. This plant, the contract for the electric equipment for which was awarded to the General Electric Company, generates energy for transmission to the Kolan gold fields, about 100 miles away. He paid a visit to the United States regarding the carrying out of the scheme, and it is expected that if the Madras proposition is a feasible one he will again place contracts with American firms.

ELECTRIC TRACTION EXTENSION, WEL-LINGTON, N. Z.—The extension is contemplated of the electric traction system in Wellington, New Zealand, the main line of which is now under construction by the British electrical engineering and contracting firm of Macartney, McElroy & Company, Limited, whose New York offices are in the Havemeyer Building, No. 26 Cortlandt street. The Macartney-McElroy contract is worth about \$500,000. It is now proposed to construct a line to Brooklyn, Island Bay, and Kilbourne, suburbs of Wellington. The new line will cost, it is estimated, about \$325,000. W. R. Wright is engineer for the Wellington corporation on the electric traction proposition -Ex.

NEWCHWANG IMPROVEMENTS.—NEW-CHWANG, 11th August.—The Japanese have appointed a Military Administrator for the city, and certain public works will be carried out immediately under an engineer division. Major Yokura is in command.

The revenue from the West Customs will be utilized to institute improvements throughout the native city and the British Concession, the foreshore and bund. Streets, sanitary improvements, and electric lighting works will be begun immediately; also the alteration of the railway gauge between Neuchiatun and Tashih-chiao.

The Russians when evacuating have not destroyed any of the bridges.

Trains are running daily from Pulantien to Haicheng town.

MATERIAL FOR MANILA STREET RAIL-WAY .- A dispatch from Pittsburg says: "A large shipment of electrical material designed to modernize the municipal lighting and electric railway system of Manila, P. I., was today shipped from this city. Orders for electrical and other machinery for the Philippines are becoming part of Pittsburg firms' daily routine." The contract for the material, etc., was placed with the Westinghouse interest by the Manila Electric Railroad and Lighting Company, of which J. F. Swift of Detroit, Mich., is president; and J. G. White of the electrical engineering and contracting firm of J. G. White & Company, 49 Exchange place, ex-President Buhl of the Sharon Steel Company of Sharon, Pa., and President Smith of the Securities Company of Pittsburg (a Westinghouse concern), are primarily concerned. All the material, equipment, etc., for the Manila system will be of American manufacture with the exception of the rails, for which Wonham & Magor, Morris Building, acting in behalf of Suren, Hartmann & Company of London, got the contract. At the time of placing the rail order European mills offered better inducements as to delivery than the propositions

NEW ZEALAND POWER TRANSMISSION Scheme.—New Zealand advices state that a bill is being promoted in the New Zealand parliament to enable the Waipori Falls Electric Company to generate electrical energy for transmission to Dunedin, to various places in the counties of Taieri, Bruce, Tuapeka, and Waikonati, to the boroughs of Milton, Mosgiel, Green Island, Caversham, South Dunedin, St. Kilda, Mornington, Roslyn, Maori Hill, Northeast Valley, West Harbor, and Port Chalmers, and to the road districts of Peninsula, Tomahawk and Portobella. Noves Brothers, the Australasian electrical engineering and contracting firm, which takes care of the Westinghouse interests, are expected to secure the contract for the electrical equipment of the Waipori plant. The water turbines will in all probability be of Swiss (Escher, Dyss & Co., Zurich) build.—Ex.

emanating from this side .- N. Y. J. of C.

CHRISTCHURCH TRACTION SYSTEM EQUIP-MENT .- The Cleveland Crane Company of Cleveland, Ohio, has secured a contract for crane equipment from the New Zealand Electrical Construction Company, which concern is building an extensive electrical traction system in Christchurch, New Zealand. Practically all the other equipment will be of Yankee manufacture. The rails will be shipped by the United States Steel Corporation. Curtis turbines will be installed in the power station. The car bodies will be of Stephenson type. The Peckham Manufacturing Company of 26 Cortlandt street got the contract for the trucks. The General Electric people will ship the motor equipments for the cars. The American Steel & Wire Company, branch of the United States Steel Corporation, will forward the feeder cable, etc. The shipments are to be handled through Henry W. Peabody & Co., State street.

TRUCKS, TOKIO STREET RY.—The Peckham Manufacturing Company of Kingston, New York, is about to make shipment of a big lot of trucks for use in the Tokio, Japan, street railway.

Tramways, Bangkok, August 11, 1904.— We understand that H. R. H. Prince Nara has applied for and is likely to get a concession for the construction of a tramway from Bangkok to Pakret. It is to be a steam tramway and will run from the termination of the Siamese Tramway Co.'s line in the Samsen district more or less along the river. There is a considerable population in the district to be served, and if the scheme goes through the tramway ought to be a great convenience. A large part of the land belongs to Prince Nara himself.—Bangkok Times.

TRAMWAYS, BANGKOK .- In a letter to the Bangkok Times, Mr. Aage Westenholz, the

manager of the Siam Electricity Co., Ltd., states that the tram lines applied for by his Company are as follows:

I. A branch continuing the Samsen Tramway from Tapan Siew along the Rajini Road to the River.

2. Another branch connecting the curve of the Bangkolem Tramway at Seekak Phya See with Tatien.

3. An extension of the Bangkolem Tramway from the Barracks to Ta Chang.

For the first two we offer the Government a yearly rent at the rate of 8,000 ticals per mile; for the last 12,000 ticals per mile per annum.

The total length applied for is a little over one mile, and the track rent offered is over 10,000 ticals per annum.

As the cost of the present Bangkok Tramways is about 100,000 ticals per mile, such a payment to the Government corresponds to 10% per annum on the capital—a sum rarely earned for dividends by any tramway. But if

earned for dividends by any tramway. But if this Company is willing and able to pay it, for the mere right of laying rails, maintaining part of the road, and taking half the wear and tear off the other part, I do not see why the Government should not take it.

PORT WORKS.

WHARF, TIENTSIN.—The Standard Oil Company, who have recently opened their own agency at Tientsin, have been busy raising land with the object of having a wharf between the I. C. R. and the Lu-Han railway wharves, where steamers will be able to discharge cargo.

MELBOURNE PORT IMPROVEMENTS.—A deputation representing oversea shipping interests waited yesterday upon the State Premier, Mr. Bent, with a request that the shipping facilities of the port should be brought up to date, and that some scheme for the general improvement of the port should be undertaken.

Mr. Bent, in reply, said he had a bill on the stocks, and he had no objection to telling them its contents. There were at present 12 members of the Marine Board. He proposed, instead of having a Harbor Trust with 17 members, to place its work in the hands of a man like the chairman of the Railway Commissioners, assisted by two business men, and to have no electoral representation at all. It was also intended to take control of the pilots. This had been in his mind a month before the loss of the R. M. S. Australia. He believed it was the proper thing nowadays to have docks instead of piers. This was the direction in which he was going. The bill was in the hands of the draftsman, and, as soon as it was drafted, he would bring it before the Cabinet and submit it to the shipping community, in order to obtain their advice.

DREDGING, MACAO.—A report is current that a Belgian company is trying to arrange for the opening of a Casino at Macao, on Monte Carlo lines. The promoters have offered to dredge the harbor by way of inducement.

Whangpoo River Improvements.—A Peking report states that the different powers have consented to permit China to improve the Shanghai Huangpu watercourse herself, but it requires \$460,000 per year to carry out the work. Kiangnan alone has consented to contribute \$230,000 and the Waiwupu has requested Szechuen to contribute \$100,000 per year, and Kuangtung, \$130,000.

DREDGING THE MOUTH OF THE YANGTSE.—
In reply to the statement made by the Chinese
Foreign Office to the Foreign Ministers regarding the dredging of the mouth of the Yangtse,
the British, American, German, and Japanese
Ministers have replied as follows:—

The proposal of the Viceroy of Nankin is contradictory to the condition in the agreement, which states that no alteration can be made without the common consent of all the Powers, which consent is most difficult to obtain. Moreover, it is proposed that half of the dredging expenses. Tls. 460,000, should be paid out of the Customs revenue, which, however, is the security for the repayment of the loan, so that it is impossible to pay the expenses from this source.

—Native Paper.

KIDDERPORE DOCKS.—CALCUTTA, July 28.—At a meeting of the Calcutta Port Commissioners, held on the 11th inst., plans and estimates for the providing an extra coal berth in No. 2 Kidderpore Docks were approved and submitted for the sanction of the Government. The cost is estimated at Rs. 143,566.

At a meeting of the Calcutta Port Commissioners, held recently, the proposed scheme for the installation of an electric power station at the Kidderpore Docks was approved and submitted for the sanction of the Government. The estimated cost is Rs. 506,000, and the tenders are invited on both high and low speed engines.

Dredging of the Hoang-pu-kiang.—The Jiji's Shanghai correspondent states that the corps diplomatique at Peking has given its consent to the carrying out by China of riparian works at the Hong-pu-kiang on her own account. The Powers, however, object to the use for this purpose of the revenues already allocated as security for the Chinese indemnity or loans. It is stated that the Chinese Government intends to establish a copper mint in each province, in order to raise therefrom the necessary funds for the above scheme.

ROADS

STREET REPAIRS, PEKING.—Tls. 200,000 have been procured for repairing the streets of Peking. The work has been finished as far as Von Kettler's Monument within Chungwenmen Gate. Much further work and money are needed, therefore the Government proposes to use forty per cent of the royalty paid by the Transvaal Commissioners of Immigration to the Tientsin Authorities and the Transit pass fees of the Tientsin Customs for the above purpose.

MUKDEN-HARBIN ROAD.—The great road between Mukden and Harbin, on which thousands of coolies have been working, is now completed to a point 12 miles south of Harbin.

NEW ROAD TO SHANHAIKWAN, N. CHINA.—
The engineering corps of the Chili First Standing Army, under the supervision of Chang, have completed making a modern road from Paoyang to Shanhaikwan, the width of which is enough for two carts to be drawn side by side.—Sin Wan Pao.

BRIDGES

BRIDGE, BANGKOK.—The project of bridging the Menam River, Bangkok, has been "post-poned," and blame is thrown on the expenditure as estimated in the recently published Budget.

BRIDGES, SHANGHAL.—A reinforced concrete bridge is being constructed over Tsze Pang in the line of Avenue Road Extension. A new concrete and iron bridge is being constructed over Defence Creek at Burkill Road.

WATERWORKS.

Drainage System, Karachi, India.—The Karachi Municipality have applied to the Bombay Government for permission to borrow in the open market a sum of 5½ lakhs of rupees for the extension of their drainage system. The loan is required during 1904-05, and will be called up in four instalments. It is proposed to repay it within the period of 30 years, the annual instalments to be of Rs. 18,500. Interest will be paid half-yearly at 4½ per cent per annum.—Capital.

Waterworks, Canton.—News has come from official sources in Canton to the effect that the Viceroy there has obtained permission from the Imperial Government to raise a loan of Tls. 3,000,000 for the purpose of opening industries in Canton, building railways to Hongkong and Macao, and constructing waterworks in Canton.—Eastern Times.

WATERWORKS, SEOUL, KOREA.—An American concessionaire is represented to have de-

clared that the terms of the Seoul waterworks agreement is fifty years, and the programme has been already drawn up, with a capital of 2,000,000 yen. The construction work will be started from April, 1905.

IRRIGATION IN INDIA .- SIMI, A, July 27 .-The annual review of Irrigation in India, in 1902-03, by Mr. Sidney Preston is published. It shows that canals continue to be an exceedingly profitable Government investment. The percentage of net revenue on capital outlay of all canals classed as productive in 1902-03 was 7.40, compared with 6.59 in 1901-02, and 7.3 in 1900or. The corresponding profit on all Irrigation works, protective as well as productive, for which accounts are kept, was 6.9 per cent, compared with 6.31 and 6.77 per cent in the two preceding years. Among the most successful of works was the Chenab Canal, which earned over twenty-one per cent during the year, and the Eastern Jumna Canal which has earned its cost more than five times over since it was built. The total capital expenditure on Irrigation works during the year was eighty-nine lakhs, against eighty-six lakhs in the previous twelve months. The total area irrigated was close upon twenty million acres. The value of crops raised by irrigation is estimated at forty crores of rupees, being eighty-eight per cent upon the total capital outlay expended.

FOOCHOW WATERWORKS.—PEKING, Aug. 4.— The establishment of waterworks at Foochow was first planned by a French syndicate. Afterwards, another foreign company appeared to be about to undertake the same work. The French Minister at Peking has asked the Chinese Foreign Office to wire to the Viceroy of Minshe that the scheme of the French syndicate will be granted.

KALLANG WATER SCHEME.—SINGAPORE, Aug. 8.—In a report recently submitted to the Municipal Council by the water engineer, Mr. Bell, and transmitted to the Government for submission to an expert, the following data is given:

"In transmitting this report the Municipal Commissioners desire to observe that the sum of \$2,500,000 mentioned in Mr. Anthonisz' letter C. S. 8-2-02 of the 2nd August, 1902, was not an estimate, but merely a statement that the works would not cost less than this sum. No estimate was made or placed before the Commissioners till borings and surveys had been made on which to frame an estimate. When this had been done it was found that the original preliminary report, made after going over the ground with a 1-in. Government map (see paragraph 74 of report), had to be modified and the scheme enlarged in many respects. For instance, it was expected that no impounding reservoir would be required in the Seletar Valley, an expectation which has not been realized. Again, as a result of trial borings, the foundations of the new Kalang Reservoir have been ascertained to be more costly than was anticipated. It was also expected that the necessary pipe line would have been much shorter had the first reservoir site selected proved suitable. Again, recent experience of Singapore water has rendered it probable that a much larger filtering area will be necessary than was originally anticipated. The total approximate estimate is now \$7,295,410, but the cost of the works recommended to be taken up first is \$3,634,460, and the expenditure would be spread over a term of probably 5 years.

"The estimate does not include the extension of the present filter beds, which are expected to cost \$650,000, but nothing definite can be stated till the result of the experiments now being carried on is made known.

"The Commissioners are therefore of opinion that the special ordinance authorizing a water loan should provide for a sum of about £800,000."

Water Supply, Bangkok, Siam.—According to the Siam Free Press the artesian well borings, on which the hopes of the city have been centered for furnishing a supply of pure water for the city, have proved a miserable

failure. The Dusit Park bore at a depth of about 500 feet produced under pressure a fluid having the appearance of chocolate and milk. The water obtained from the borings within the Military Barracks' compound was also unfit for human consumption, and the borings have been carefully plugged and sealed again.

BUILDINGS

NEW CHURCH FOR BANGKOK .- The members of the Bangkok Protestant Church have been delighted by the kindness of His Majesty the King of Siam, in giving them a site for a new church at the end of the Klong Poh Yome Road. Not only is the site three times as large as that granted 40 years ago for the present church, but the land is drained and raised, and is in one of the healthiest and coolest parts of the town. In addition His Majesty has granted the Church permission to sell the old site and apply the proceeds to the building fund for the new one. It is estimated this will provide nearly 57,000 tes. For this sum it is hoped to erect the church, and one contractor intimated his willingness to expend 8,000 tcs. before claiming anything for cost.

The new offices of the Russo-Chinese Bank at Tientsin are reported to be almost finished.

of the Club Concordia at Shanghai met on the 18th instant and decided to proceed with the building of a new club house, on plans by Mr. Bedber. The total cost, including Tls. 200,000 for the site already bought, will be Tls. 400,000.

HOSPITAL, HANOI.—The Governor-General of Indo-China has granted a supplementary credit of \$40,000 towards finishing the hospital for women at Hanoi.

HOTEL METROPOLE, SHANGHAL.—In view of the fact that the Hotel Metropole, which has become so popular under the able management of Mr. Biddle, is to be floated as a limited company, it is interesting to note the plans already made for the improvement of the hotel premises.

According to these plans, prepared by the well-known firm of Atkinson & Dallas, which are on view at the Hotel, the enterprising manager, Mr. Biddle, has determined that the remodelied Hotel shall rank as the most up-to-date hostelry in the settlement, if not in the Far East. The proposed alterations will increase the bed-room capacity to 100 rooms. Imposing cupolas will break the plain frontage of the present building, which will be further relieved by ornamental buttress, and embossed cornices of stone work are to surmount each window, and the whole face of the Hotel will be cemented.

But it is in the interior of the building where the most marked improvements and alterations will be effected. The rear of the premises will be practically rebuilt and a new story of first-class bed-rooms added. A machine room will be erected, in which will be located a refrigerating and electric light plant. New kitchens and pantries, containing all the latest American improvements, and tiled in white from floor to ceiling, will be included. Several private dining rooms, a private buffet for gentlemen, hand-some sitting room for ladies, and gentlemen's reading and lounging rooms, are embraced in the proposed improvements.

The main entrance will be an imposing one, the present cramped space being greatly entarged by removing the main stairway some twenty feet farther back and locating the present offices further to the rear. An up-to-date barber's shop is on the tapis, and one of the best bowling alleys in the Orient will be a feature of the caravansary.

Light wells will run through the central portions of the building, providing the inner bed-rooms with plenty of light and air. In place of the present wooden supports, cast-iron girders will be substituted throughout. In as far as possible, all corridors and floors will be tiled, thus ensuring absolute cleanliness. With bed-rooms installed with electric light and fans, and with the latest improvements known to the

Hotel trade for ensuring hygienic perfection and absolute comfort for guests, we predict that the company when floated will, with their interests under Mr. Biddle's personal supervision, be a gigantic success, and be one of the biggest dividend producers in Shanghai.—

Shanghai Times.

SHIPBUILDING

HONGKONG AND WHAMPOA DOCK CO .- NEW STEAMER.-The Hongkong and Whampoa Dock Company, says the Hongkong Telegraph, have cause for self-gratulation at the progress made in the geodetic survey steamer which they are building for the Philippine Government, for service in that archipelago. An account of this vessel's dimensions has already been published, and, while it is only some six weeks since she was laid down, it is expected that she will be launched, and ready for the boilermaker's and carpenter's hands, within the next two weeks. This boat is being built on the same lines as the Pathfinder, which is now engaged in the geodetic survey work in the Philippines, with the exception that she has extra watertight bulkheads for additional strength and safety. It is anticipated that this vessel will be ready to be handed over well within contract time, notwithstanding the delay in receipt of the material from England-a delay, however, to a certain extent counterbalanced by the ability of the Dock Company to forge much of the required material in their own workshops. A name for the new survey boat is now under consideration.

NEW STEAMER, RILEY, HARGREAVES & Co.

—A new steamer is to be built for the Harbor

Dept., Penang, for towing and other purposes.

She is to be of steel and fitted with twin screws.

The tender of Messrs Riley, Hargreaves & Co.,

Ltd., has been accepted.

SHIPBUILDING, JAPAN.—Two steamers are at present being built by the local Kawasaki Company to the order of the Osaka Shosen Kaisha. Both vessels are intended for the Korean service and will be named the *Mokpo-maru* and *Gun-and-maru*. It is expected the former will be launched by the middle of next month. The gross tonnage of each vessel will be 677.

Apropos of this a vernacular contemporary observes that the shipbuilding industry of this country has remarkably developed. After years of elaborate preparation and thought, and by the extension of workshops, the Kure Naval Arsenal is now able to manufacture all the materials of a battleship, and is in a position to build a first-class armored cruiser in as short a time as twenty months. It is not generally known that torpedo-destroyers and cruisers of the second-class and under can be built at many private shipbuilding yards. Recently the naval authorities gave orders to various yards in Japan for the construction of about twenty boats for coast defence.

NEW LAUNCH, RILEY, HARGREAVES & Co.—
The steam launch Mata Mata, which was built by Messrs. Riley, Hargreaves & Co. for \$18,000, for the Police Department of Singapore, gave entire satisfaction on her trial trip.

LAUNCH AT KAWASAKI.—The Gunsan Maru, which has been built at the Kawasaki Dockyard to the order of the Osaka Shosen Kaisha, was successfully launched on the 25th of July. She is a vessel of 775 tons, and her principal measurements are: length, 180 feet; breadth, 28 feet; ments are: length, 180 feet; breadth, 28 feet; depth, 19 feet. She is said to be intended for the Company's Korean line.

Launch at Osaka Iron Works.—The Anto Maru, a sister ship of the Gishu Maru, which has been built at the Osaka Iron Works to the order of the Osaka Shosen Kaisha, was successfully launched, July 26th. The Anto Maru is a steel vessel of 800 tons. She measures 180 feet over all, is 30 feet in breadth and 19 feet deep. Her contract speed is 12 knots. She has accommodation for 298 passengers, including steerage.

MISCELLANEOUS.

AMERICAN SUPPLIES, CANTON.—An American exchange says that Charles S. Paget, an architect and engineer of Canton, China, is desirous of securing data regarding American building material, machinery, cement, paint, elevators, engineering supplies, etc., for which there is a large opening in that part of the world.

ROOFING, PHILIPPINES.—The Standard Paint Company of 100 William street has secured the contract calling for the shipment of upwards of 800,000 square feet of roofing to the Philippines.

OIL WELL MACHINERY, JAVA.—The Oil Well Supply Company, of Pittsburg, Pa., New York offices Havemeyer Building, have secured a substantial order for machinery to be shipped to the Dutch East Indies.

Locomotive Works, Japan.—A large locomotive plant is to be built in the vicinity of Yokohama by a new concern called the Anglo-Japanese Locomotive & Engineering Company, Limited. It is expected that a large portion of the equipment, especially the heavy tools, will be purchased in the United States.

PROSPECTIVE MINING MACHINERY ORDERS, JAPAN.—Yoshitaro Watanahe, professor of metallurgy of the College of Engineering, Imperial University, Tokio, Japan, is now on a perial University, Tokio, Japan, is now on a visit to the United States for the purpose of getting pointers on the operation of mines. The visit is expected to result in the placing of some good-sized contracts for American mining machinery in the near future.

MITSUI & CO. TUBE MILL EQUIPMENT.—The Japanese houses of Mitsui & Company and Okura & Company have inquiries in hand for plate mill equipment. The Mitsui people, also Takata & Company, No. 10 Wall street, are also in the market for machinery to be installed in Japanese tube mills.—N. Y. Ex.

COTTON MILL EQUIPMENT, BOMBAY.—J. B. Petit and D. J. Cama, prominent Parsee merchants of Bombay, who recently arrived on a visit to the States, are largely interested in Indian cotton mills, for which it is proposed to purchase considerable American equipment.

A Japanese paper says: "A smokeless coal factory has been established at Tokuyama, Nagato, by the Naval Office. The inhabitants have presented a piece of ground (valued at Y.13,000) to the Government."

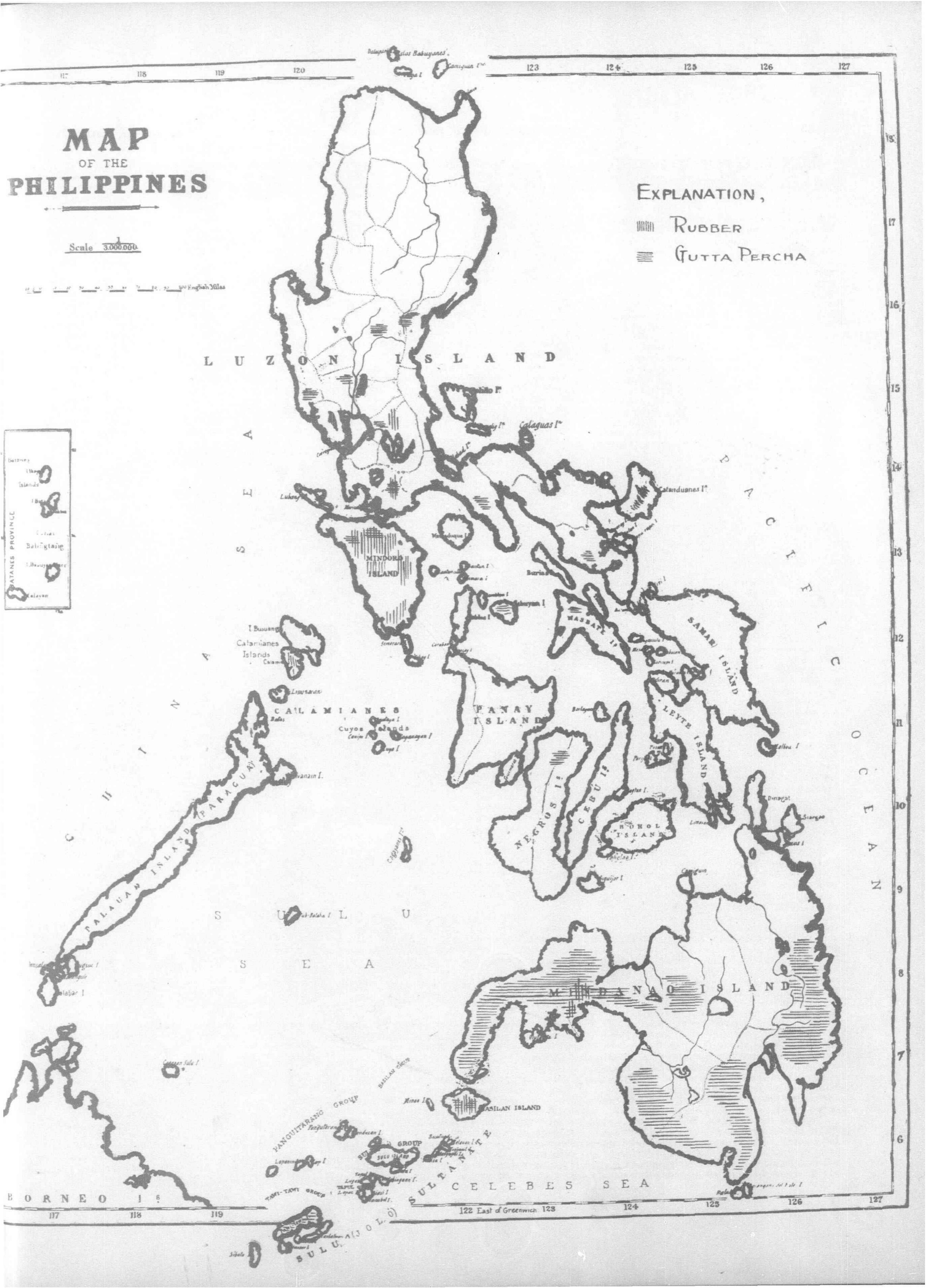
Porcelain Factory, China.—By permission of the Governor of Ho-nan, some wealthy Chinese merchants have established a China Porcelain company at Yu-chow to make porcelain for both foreign and Chinese markets. Iain for both foreign and Chinese markets. The capital will be Tls. 100,000, at Tls. 50 per share, but they are reserved strictly for Chinese, and shares will be confiscated if the holders sell them to any foreigners.

AMERICAN COAL DEPOT IN SOUTH CHINA.—
A Peking despatch to the Tokyo Asahi states that in compliance with the request of the United States Consul at Nanking, Viceroy Wei Wang-to has granted America's demand to establish a coal depot on the lower reaches of the Yangtsze river for the benefit of the American fleet on the China station.

PORTLAND CEMENT, SHANGHAL.—The tender of Messrs. Shewan, Tomes & Co. for the supply of cement during the year ending 31st August, 1905, is accepted. Price Tls. 3.75 per cask.

Messrs. Howarth, Erskine, Ltd., have obtained the contract for the supply and erection of iron and steel work in connection with the boiler and carriage shops at the Central Railway Workshops.

COLD STORAGE, JAPAN.—Endeavors are being made to start a company for the erection of cold storage at Kobe and Yokohama.



HON. W. CAMERON FORBES,

Secretary of Commerce and Police Philippine Islands.

Hon. W. Cameron Forbes, of Boston, Massahucsetts, the new member of the United States Philippine Commission, has formally assumed the portfolio of Secretary of Commerce and Police in Governor Wright's Cabinet. While Secretary of War Taft was the Chief Executive of the Philippine Government, General Wright was at the head of this important department, so that Mr. Forbes has the special distinction of succeeding to the secretaryship on the Commission vacated by the Governor

on account of promotion. President Roosevelt took no step towards filling the Secretaryship of Commerce and Police until after the return of Mr. Taft to Washington. There were a large number of aspirants for the office, many of them high in the councils of the Republican Party; but the President had determined that the question of politics should not enter into the selection of the new Commissioner. The United States Government had long before formulated extensive plans for the commercial and industrial rejuvenation and development of the Archipelago, and it was with a determination to seat on the Commission a man of experience

and energy along construction lines that Mr. Roosevelt began to look for a man.

Mr. Forbes never asked for the position. His business associates and personal friends recognized his ability along the precise lines upon which the Government had planned to build in the Philippines, and knew of his sterling integrity, and it was they who asked for the appointment of Mr. Forbes. Although a young man, being not yet 40 years of age, Mr. Forbes had long before made his reputation as an organizer of immense development enterprises in the United States, and also his fortune. He had organized and built numerous electric railways and other electrical enterprises, and in more than a score of ways had proved himself to be just the man President Roosevelt was looking for to take charge of future construction work in the Philippines. When the President became thoroughly convinced of this he tendered the Commissionership to the Bostonian, who sacrificed private interests and a brilliant future in the industrial world of the United States to serve his Government in these far-away possessions. Mr. Forbes comes to us without ostentation of any kind, yet he comes with the responsibility of a gigantic work to do. The plans he is here to develop cannot be brought into realization in a day, or a month, or a year. The construction of railroads, the building of highways, etc., and the resurrection of the inter-island merchant marine, will require years to accomplish; yet Mr. Forbes is no idler, and the plans he has already entered upon in his official capacity will be pushed forward with characteristic energy.

A forecast of his policy was communicated to the business men of Manila on the occasion of a banquet in his honor. We reproduce

the speech in full.

Commissioner Forbes said: Before taking up the subject of railroads, in which the islands are poor, I wish to say a few words about another and better kind of transportation which is common to all the islands and gives them almost unparalleled possibilities. I speak of transportation by sea, navigation. We have here 11,000 miles of sea coast, more than double that enjoyed by the United States in spite of her vast extent of territory, and when we think of the fact that the western coast of the United States extends for several hundred miles north and south of San Francisco without any harbors, we can readily see how fortunately placed these islands are, with their magnificent harbors and ample waterways.

England, Germany, Holland, Greece, and Egypt, to say nothing of the United Stateshave spent millions upon millions of dollars to provide waterways which seem insignificant when compared with those which nature has given to us here in such lavish measure.

These nations all see that waterways are cheaper and better than railways, and go to expenses which would build many times the same length of railroad in order to get connecting links of water transportation. We must not neglect the opportunity which is thus given us to bring our products to the markets of the world. With this end in view, accurate and scientific charts are being made which will show the location of dangerous reefs and rocks, and direct navigators to the channels where good water can be found. Lighthouses are being erected and buoys placed at the proper places, all with a view to increasing the safety of the shipping.

We cannot go as fast as we should like in this, but every year strides have been made and will be made until we have a system second to none. We have the advantage that we do not have to make costly experiments, as we are now in a position to take advantage of all the experiences of all the ages in other countries, and put the most modern and improved methods in force. Our harbors must be widened, deepened, and provided with walls and docks, that ships may be enabled to practice the most economical methods in handling freight by running directly alongside of the wharves and loading from adequate warehouses, that will protect merchandise from destruction by rain and storms. Compared with the railroad, there is one feature of navigation that must not be forgotten which is very manifest; no matter how complete a railroad may be, how great its resources or how enormous its business and experienced its management, it can only reach a limited number of cities and supply a limited number of people; it must stop when it reaches the edge of the water, but ships have the whole world from which to choose. They may go to any seaport and to any of the continents of the world, and thus provide a range for the market of produce which no railroad can possibly give. So that, however much we plead for railroads, we must not forget that our country is destined to be a great maritime nation, and the most important avenues of commerce will always be our waterways.

Do not think from what I have said that there is any lack of appreciation for railroads on my part. The development of the railroads is a branch of industry with which I am most concerned, and I believe with all of you that the development of railroads will bring with it the industrial revival and increase of prosperity for which we are all so eagerly looking. President Roosevelt and Secretary Taft are both of them keenly alive to this, and they assured me that in their judgment the construction of the railroads was the most important of the immediate needs of the archipelago.

Methods of transportation by land and water do not compete and will develop side by side, the increase in one being for the advan-

tage of the other. I am very ambitious for a good railroad system, one that will give the greatest mileage and the best service. It may be necessary to take some little time to make the plans, and I should advise going very slow in granting any short lines, fearing lest it might jeopardize some greater railroad system which would prove to develop a larger portion of the island.

A good railroad is not measured only by the number of miles of trade, but also by the service which it gives. The frequency and speed of the trains and the quality of cars and equipment, the convenience of the accommodation and of the schedules, must all be taken into account, and I am ambitious to have a system here that will equal those to which we are accustomed in the United States. As railroads through some parts of these islands might not pay at the present time, and yet are desirable for the development of the lands they would reach, it has been proposed by Congress to give the Commission the right to guarantee interest on the bonds to be issued by these railroads, which will enable them to induce the construction of a very much more complete system than can be got in any other way. It has been

generally believed that this proposed guaranty is in the form of a subsidy, a direct payment by the Government of the interest on the bonds; but this is not the case. No payment will be made unless the railroad fails to earn the interest in the cost of its property, and the law provides that any advance made toward the payment of this interest by the Government, after the road has had time to get well under way, shall be repaid to the Government by the railroad.

I was very much pleased to find out how much interest the capitalists in the States were taking in this proposition, and many of the representatives of the strongest houses expressed themselves as anxious to take up this enterprise. They are awaiting the action of Congress, which adjourned last winter, before making any further move.

The enthusiasm of these people makes me certain that these islands will have an ample railroad service. Finally, I assure you that I have come here to devote all of my time and energies and what poor abilities I have to this work. It shall be my first duty to see that we have adequate transportation.

I want to thank you for your attention to my words, and for the honor you have accorded me in gathering tonight.

MESSRS. HOWARTH ERSKINE, LTD.

The Straits Times of Singapore has a notice to the effect that the well-known engineering firm of Messrs. Howarth Erskine, Ltd., have removed their town business in Battery Road to the building in the same road alongside Messrs. McAlister Co. Their new premises have been splendidly fitted up to suit the requirements of their business, and their clients should have no difficulty in getting their wants attended to. The electrical department, which was formerly in Chancery Lane, forms portion of the new premises, and the increased space at their disposal enables the firm to display their goods in a manner worthy of their value. The firm has lately secured some new agencies, notably Messrs. Babcock & Wilcox, Ltd , Patent Water-Tube Boilers. This boiler is well known all over the world and is in extremely high favor wherever it is in use. Another agency is Callender's Pure Bitumen Sheeting, and Pure Bitumen Dampcourse. The utility of both are well known, and there should be a good demand for them in the Straits. Messrs. Howarth Erskine have some splendidly illustrated . booklets describing the virtues of the above which they will be glad to send to any prospective customers.

HONGKONG & WHAMPOA DOCK Co., LD.

An exchange says: The most up-to-date and thoroughly equipped docks east of Suez, is what the Hongkong and Whampoa Dock Company can justly claim for their works, and the statement goes unchallenged. For years past as new facilities for shipbuilding, and the work connected therewith, have been introduced into the engineering world and have proved themselves to be advantageous, they have been adopted by the Dock Company, and when electricity superseded steam as a motive power it was only to be expected that the Company would not be slow to recognize its advantages. And it has not, for to such good purpose has the onward march of electricity been kept in view by the Company that already the bulk of the machinery at the Kowloon Docks is electrically driven, and the day is not far distant when steam power will find no place in the workshops."

MINT, CHINA .- The Governor of Kiangsu (since appointed Director General of Grain Transport) memorializes regarding the purchasing of Tls. 20,000 worth of minting machinery from a well-known foreign firm at Shanghai, for the proposed mint at Soochow. The machinery is capable of turning out 300,000 coins every 24 hours, and the profit derived from this source will be reserved for furthering reform in Kiangsu province.

THE GUTTA PERCHA AND RUBBER OF THE PHILIPPINE ISLANDS

By PENOYER L. SHERMAN, Jr., Ph. D.

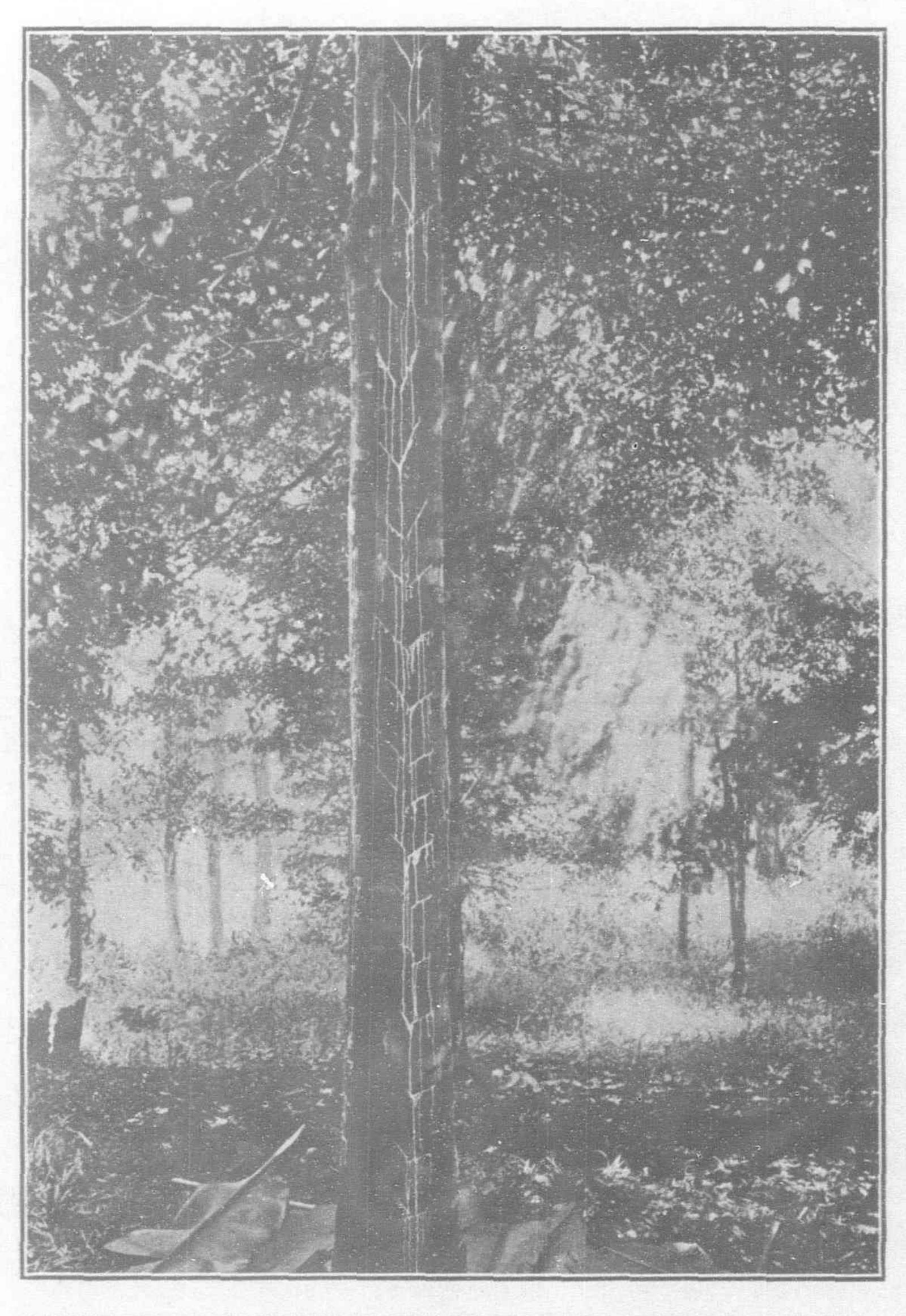
INTRODUCTION.

The material for this bulletin was collected under the direction of the Bureau of Forestry and of the Bureau of Government Laboratories. As early as 1900 the attention of the Government was called to the fact that many of the wild tribes in the southern islands were engaged in cutting down large numbers of forest trees in order to secure the gutta percha and rubber which they contained. These products they bartered to the Chinese, who in turn exported them to Singapore.

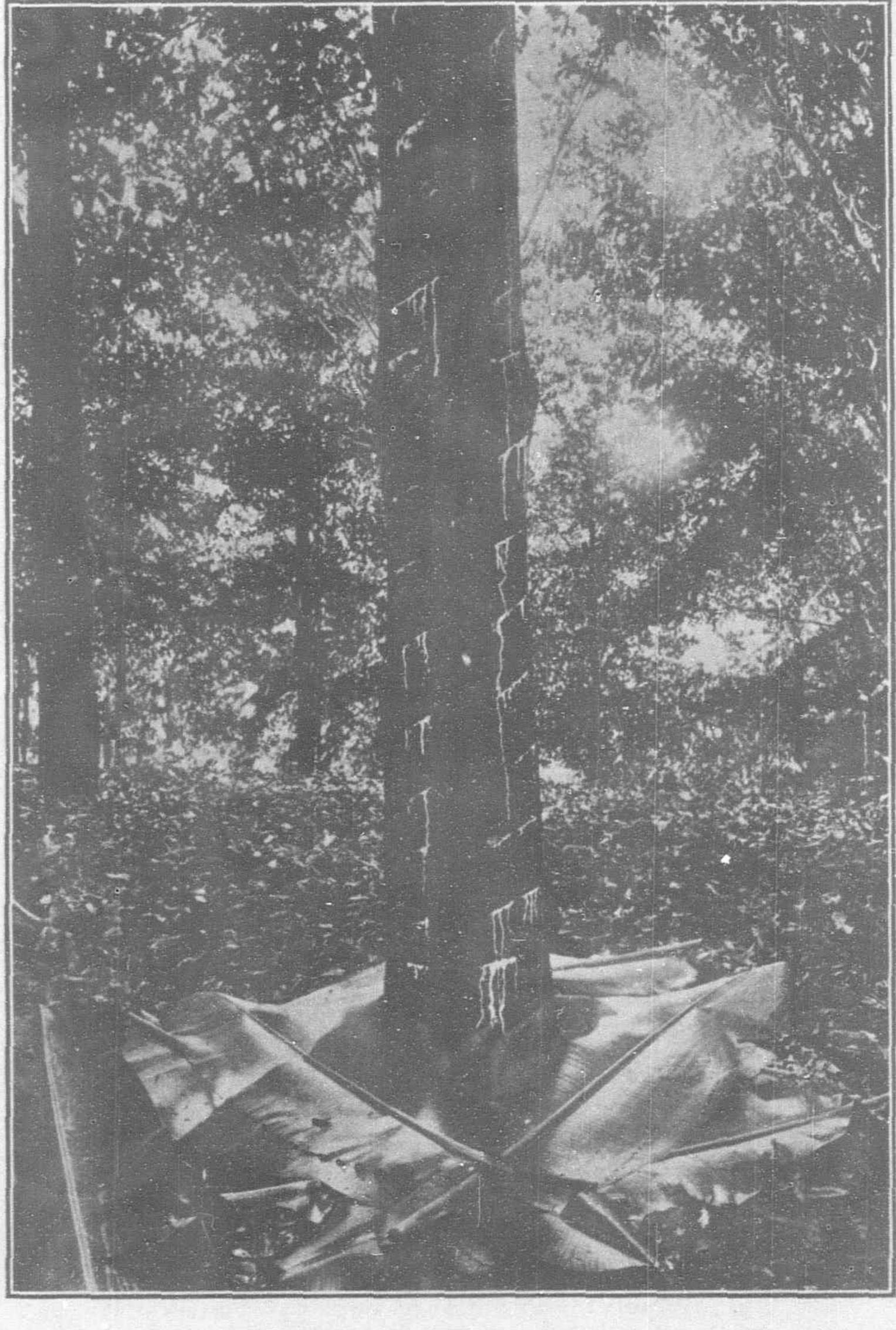
would not be one tree of this class left standing in the Philippines.

Unfortunately there was no information at hand on the subject. In June, 1901, I was sent as a special agent of the Forestry Bureau to Singapore, the Malay Federated States, and Java, to study the laws and conditions under which these forest products were grown, collected, and marketed.

Provided with the information thus gathered and which is detailed below, upon my return to Manila four months later I was again sent to the Southern Philippines to repeat my invesand row boats, and the journeys into the forests of the interior were completed on foot with native guides and carriers. The native gum collectors themselves, their method of felling the trees and vines, securing the gutta percha and rubber, preparing the same for market, the prices they received both in money and barter, were thus seen at first hand, and of course opportunity secured for making herbarium collections of the various species of trees and vines yielding gutta percha and rubber. In the principal towns the market conditions of supply, demand, prices, etc., were studied.



A TREE OF PALAQUIUM TREUBII JUST TAPPED. THE MILK HAS A GREATER TENDENCY TO RUN THAN IN PALAQUIUM GUTTA. TJIPITIR, JAVA.



A TREE OF PALAQUIUM GUTTA JUST TAPPED. THE FLOW OF MILK IS QUICKLY STOPPED BY THE BEGINNING OF COAGULATION. TJIPITIR, JAVA.

The matter was considered important enough to demand investigation, because—

(1) The trees were being cut down in violation of forestry rules.

(2) No forestry dues were paid by those either collecting or exporting these forest products.

(3) Judging from the experience of the English and Dutch in the Malay Peninsula, Sumatra, and Borneo, it would only be a question of a short time, if the wild tribes were allowed to have their own way, when there

tigations, and, as before, to make collections of herbarium material and samples of the various kinds and grades of gutta percha and rubber found there.

This first southern trip consumed several months, for, while specimens of marketable gutta percha and rubber could be secured in the principal towns, all herbarium material and gums from each tree species had to be taken personally to avoid all sources of error.

The trips along the coasts and rivers of many of the islands were made in small native sail

Upon my return to Manila I was ordered to be transferred to the Bureau of Government Laboratories, in order that all specimens collected might be tested chemically and physically, so as to determine their relative values. This analytical work, as well as severa subsequent trips to the southern islands, Paragua, Mindoro, and Culion, in search of new material, has been carried out and is here reported.

The identification of the various species of gutta percha and rubber trees and vines was kindly undertaken by Mr. E. D. Merrill,

botanist for the Bureau, who also assisted greatly in collecting herbarium material in Mindoro and Culion.

My thanks are also due to Messrs. J. H. Thigpen and Paul Stangl for much assistance in the analytical work. To Capt. George P. Ahern, Chief of the Forestry Bureau, and Dr. Paul C. Freer, Superintendent of Government Laboratories, I wish to express warm appreciation of their many courtesies and valuable suggestions in planning and carrying out the work.

PART I. GUTTA PERCHA.

I. HISTORICAL.

As is the case with many other commercial products coming from Oriental lands, the date of the discovery of gutta percha is lost in Oriental history. The famous Tradescant Brothers in 1656 (1) exhibited in their museum of curiosities in London a piece of gutta percha which they had secured in the Far East. Also in 1822 Dr. William Montgomery (2), an English surgeon, saw whips and other articles of gutta percha in use by the natives of Singapore. It is therefore safe to assume that the real discovery of this remarkable substance was made at some time previous to either of these dates.

The western or commercial discovery of gutta percha was delayed until 1843, when both Drs. Montgomery and D'Almeide sent specimens of the gum and leaves of the tree to London. While the specimens of D'Almeide were neglected, the second Montgomery received enough attention from the scientists of the Royal Society of Arts to demonstrate some of the uses to which the substance might be put. The botanists agreed that the tree belonged to the family Sapotaceæ, but as neither flowers nor fruit were at hand, they could go no further with the identification.

In 1847 the greatest advance was made toward the utilization of gutta percha. Considerable amounts had from time to time been shipped to London, and experiments were made to determine its physical and chemical characteristics. Luckily a sample fell into the hands of a young German artillery lieutenant, Werner von Siemens, who was then experimenting with insulating material for subterranean and submarine telegraphic cables (3). The ease with which gutta percha lent itself to this object and the high efficiency obtained induced him to construct a machine for insulating cables. The methods he adopted, as well as the kind of machinery, have been with few modifications in use ever since.

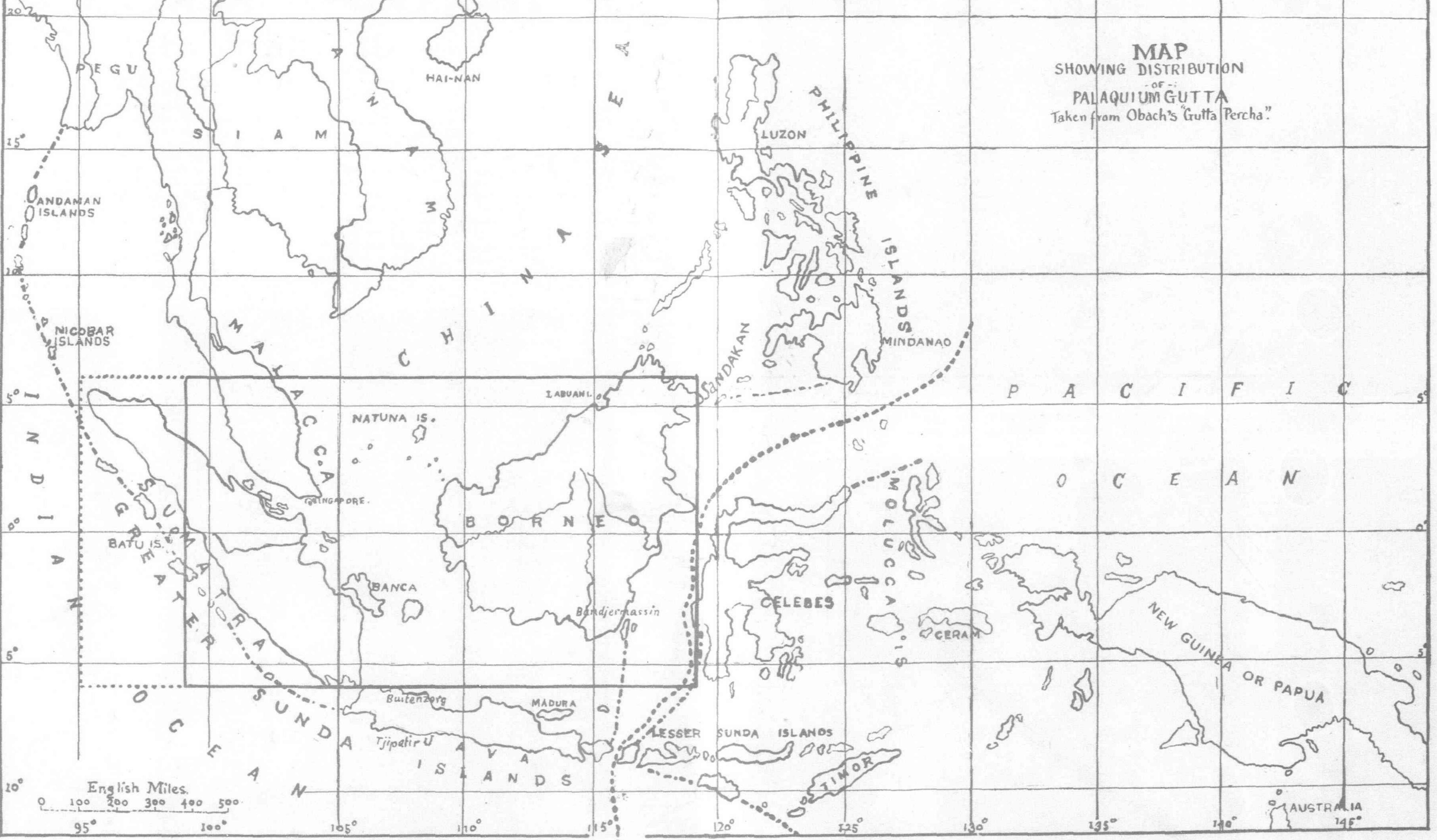
The subsequent history of gutta percha runs parallel with that of submarine and subterranean electric cables, for three-fourths of all the gutta percha produced has been used on them. With the construction of the great trans-Atlantic cables in the sixties and seventies of the past century, the demand for gutta percha became enormous, and the details of its value and ready market traveled over all this part of the Orient.

When the Malay Peninsula adjacent to Singapore failed to supply sufficient quantities to meet the demand, the adjacent islands of the Rhio Archipelago and Sumatra were invaded, and rich finds made. Finally Borneo was included in the producing zone, and lastly the Philippines.

At what date the Philippines began to export gutta percha to Singapore, the center of the trade, can not be learned with any degree of certainty. Probably twenty years ago varying quantities were exported, but apparently the trade died out, owing, it is said, to the wholesale adulterations practiced by the Chinese exporters and the prohibitory laws of the Spanish Government. For the last ten years prior to the American occupation of the Islands but little had been shipped, though the collecting and exporting began very soon afterwards and increased at once to large proportions.

II. BOTANICAL.

In the years in which Von Siemens made his great discovery of the insulating value of gutta percha for submarine cables Sir Joseph Hooker, Bentham, and others worked out the status of



the gutta percha tree. From the first specimen of leaves which had been sent to England several years previously, it was seen that the tree belonged to the natural family of Sapotacece (4). The many species of this family are scattered over the tropical and semitropical world and are distinguished by the curious property all possess of secreting a milk or latex in the inner layers of the bark. When the bark is cut or bruised and the capillary sacks and tubes which contain the latex are ruptured it flows out with greater or less abundance according to the species of the tree. This milk probably serves in the plant economy as a protection; still it is primarily an excretion, since it is discarded by the tree in its dead leaves and bark and the bark of the live tree can be tapped and the latex removed with no apparent injury to the tree.

As has been stated, it was in 1847 that specimens of the flowers and fruit finally reached London and the complete botanical determination of them made, which resulted in giving to the tree the name of *Dichopsis gutta* Benth et

Hook, fils. A few years later the Dutch botanist, Burck, pointed out the fact that as early as 1837 Padre Blanco (5) had given the name of Palaquium to this genus of Sapotaceæ, and accordingly most botanists have adopted the generic name Palaquium for these wonderful species of forest trees which produce the bulk of all the gutta percha of commerce.

As the demand for gutta increased and the trees of the species Pal. gutta became scarcer and more difficult to reach, the native collectors were not slow in finding other species that produced gutta percha, though of an inferior quality. Among these Pal. treubii Burck, Payena leerii Benth. et Hook, fils, and Mimusops balata Gaertner, fils, are the best known. Many other species have been found in Sumatra, Borneo, Celebes, and the Malay Peninsula, but what part they play in the production of the gutta percha of commerce has not yet been determined.

The accompanying figures will show some of the resemblances and differences between the

species above mentioned. The trees of the genus Palaquium are among the largest of the tropical forest and are generally to be noted by the brilliant green color of their leaves above and the golden to copper-brown shimmer below.

The following general description of the botanical characteristics of *Palaquium* is made by Mr. Merrill:

PALAQUIUM, BLANCO 1837 (DICHOPSIS THWAITES.)

Usually large trees with rusty-tomentose branchlets. Leaves obovate or oblong, acute or obtuse, petioled, coriaceous, glabrous beneath, or densely rusty-tomentose. Flowers fascicled, axillary on the naked branches below the terminal leaves. Calyx lobes 6, in two series, corolla lobes 6. Stamens 12 to 18, attached near the base of the corolla. Ovary 6-celled. Fruit fleshy, ellipsoid or ovoid, 1 to 2 seeded. Seeds exalbuminous, cotyledons large, fleshy.

In regard to the species Mimusops balata

mentioned above, it is to be noted that it is the only representative so far known of gutta percha producing trees in the Western Hemisphere. It was discovered in the Guianas in 1857 and contains a fairly good grade of gutta percha. Obach (6) designates it in his description as a substitute for gutta percha in all its chemical and physical characteristics. Though of an inferior grade to that coming from Palaquium gutta, it may well be classed among the rest of the Palaquium and Payena species furnishing second and third grade gutta percha.

The gutta percha trees of the Philippines embrace both Palaquium and Payena species, and while their complete determination or identification is still unfinished, those which produce the gutta percha of commerce have been located, and their final identification is only a matter of collecting more complete herbarium material.

The following table (No. 1) gives the species at present known. Those marked (*) probably

furnish the largest part of the gutta percha exported from the southern island:

Table No. 1.—Present known species of gutta

	P	ercha.	
Species.	Local name.	Local-	Botanical descrip- tion.
Leaves rusty to- mentose be- neath: Pal, latifolium Blanco.	palae	Luzon toMin- danao.	
Pal. oleiferum Blanco.	Alaca p or Ba- racan.		Leaves obovate-lan ceolate, 10 to 25 c m. long, 6 to 10 c. m wide, acute; nerv es, about 15 pairs closely related to th
Pal, barnesii Merrill,	Nato	Masba- te	Leaves obovate, ob tuse, thin, 12 to 15 c m. long, 7 to 8 c m. wide; nerves, 1 pairs.
*Pal. ahernia- num Merrill.	Cala- pia	Minda- nao	Leaves ovate or obovate, obtuse or acute 12 to 14 c. m. long, to 6 c. m. wide; ner
Leaves glabrous beneath: *Pal. celebi- cum Burck.		do	Leaves lanceolate acute, 15 to 20 c. m. long, 5 to 6 c. m. wide; nerves 12 to 14 pairs.
Pal. cuneatum Vidal.	Duli- tan.,	Luzon	Leaves ovate, lance olate or obovate acute or obtuse, to 7 c. m. long, 2 to 3 c. m. wide; nerves, 11 to 12 pairs indistinct.
Pal. gigantifo- lium Merrili	******	Taya- bas	Leaves obovate 50 cm. long, 20 c. m wide; nerves, 20 t 24 pairs.
Pal, luzoni- ense Vidal.			Leaves ovate, acut or obtuse, 10 to 14 c m. long, 4 to 6 c m. wide; nerves, 1 pairs.
*Pal. mindann- ense Merrill.	Cala- pia	Minda- nao	Leaves ovate, acute, to 12 c. m. long, 4 t 5 c. m. wide; petiole 3 c. m. long; nerves 14 to 16 pairs.
*Payena leerii Benth, and Hook.		Tawi.	leaves ovate or ovat oblong, 5 to 10 c. n long, 2.5 to 4 c. m wide, cuneate at th base; short acum nate at the apex.

III. GEOGRAPHIC DISTRIBUTION.

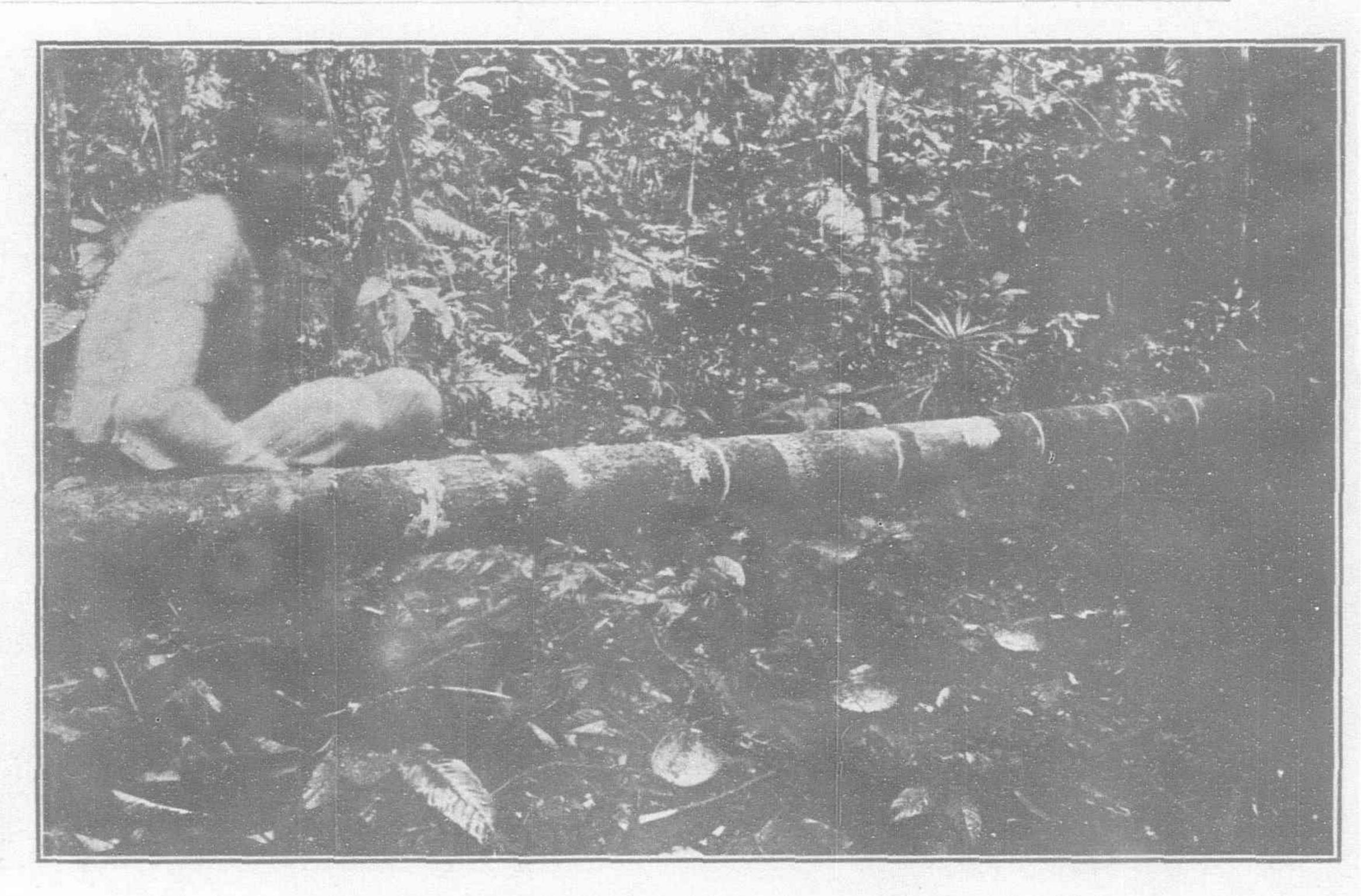
As previously stated the first gutta percha trees were reported from the island of Singapore, and in fact within a few miles of the city itself. When the substance became a marketable article these trees were the first to fall and all of the island was soon devastated. The explorations from Singapore as a center were made in all directions and with remarkable success. All of the forest of the southern half of the Malay Peninsula gave large yields, as well as the islands of the Rhio Archipelago, Borneo, and most of Sumatra. However, from all of the data which have been gathered from native sources, as well as from the information collected by many Dutch, English, and French explorers, it appears that the area of distribution of Palaquium gutta is sharply defined. Beyond the sixth degree north on the Malay Peniusula the trees become scarce or cease altogether; on the northern end of Sumatra they are likewise lacking. Java, bordering close on Sumatra, contains none, and Celebes to the east of Borneo has been found to be equally destitute. Reference to map (No. 1) will show the area of distribution of the Palaguium gutta which is practically included in a parallelogram inclosing the above-mentioned peninsula and islands. This area include some 450,000 square miles of land, of which only a very small per cent is or ever was covered by gutta percha trees.

Obach, in his celebrated book on gutta percha, practically limits the area of gutta percha production for the entire world to this small territory (7). While this statement is probably true so far as the gutta percha from Palaquium gutta is concerned, we have already seen that the area of distribution of the other or inferior species is extended eastward so as to take in

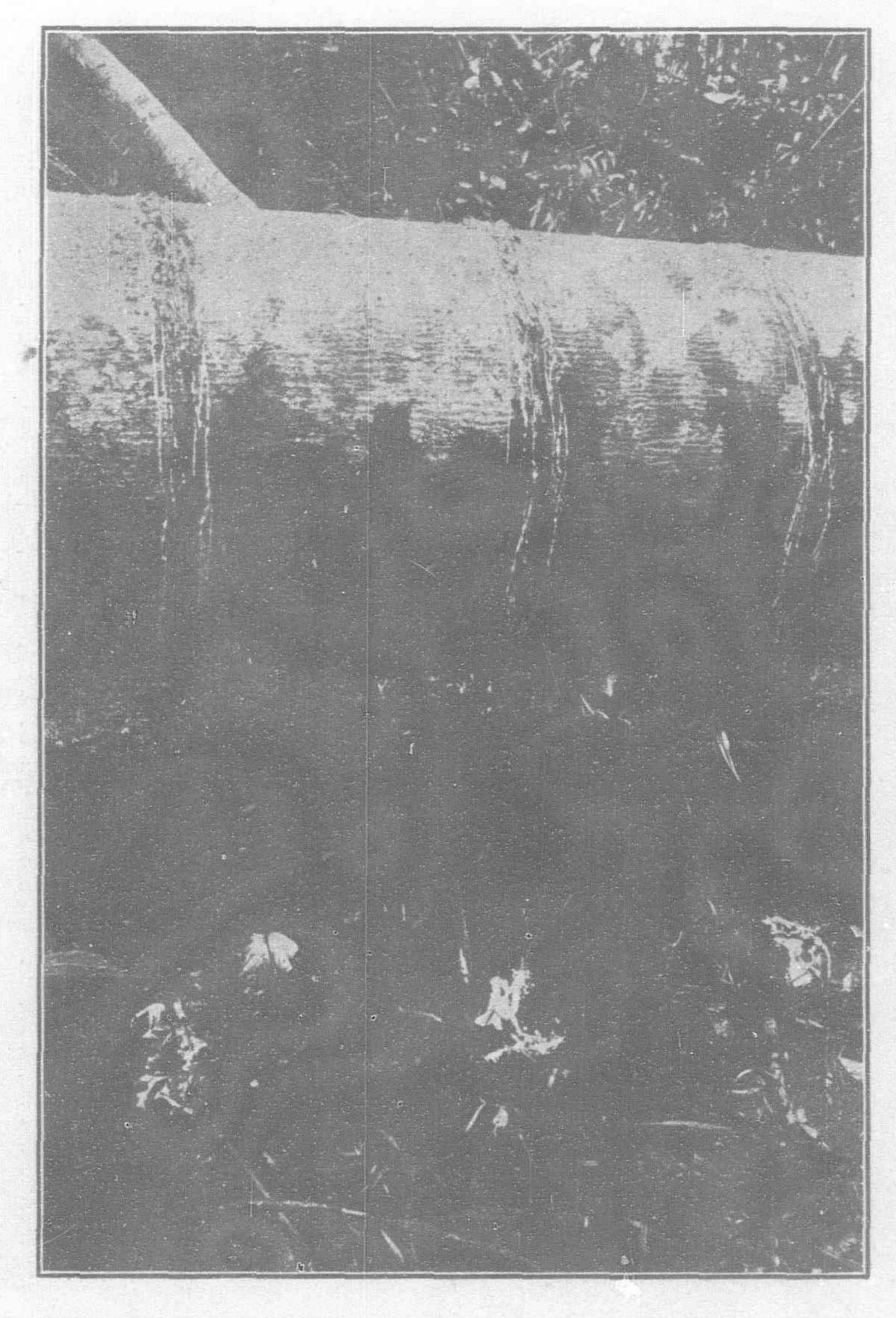
the Philippines, and the same is also true of Celebes, Java, and the northern half of the Malay Peninsula.

The number of gutta percha producing species in the Philippines has already been listed, and some of the localities given where they have been found. Attention is again called to the distribution of these localities, extending so far north as well as south, and it can be confidently expected that when the forest surveys are completed nearly all of the islands will be found to contain some species in more or less abundance.

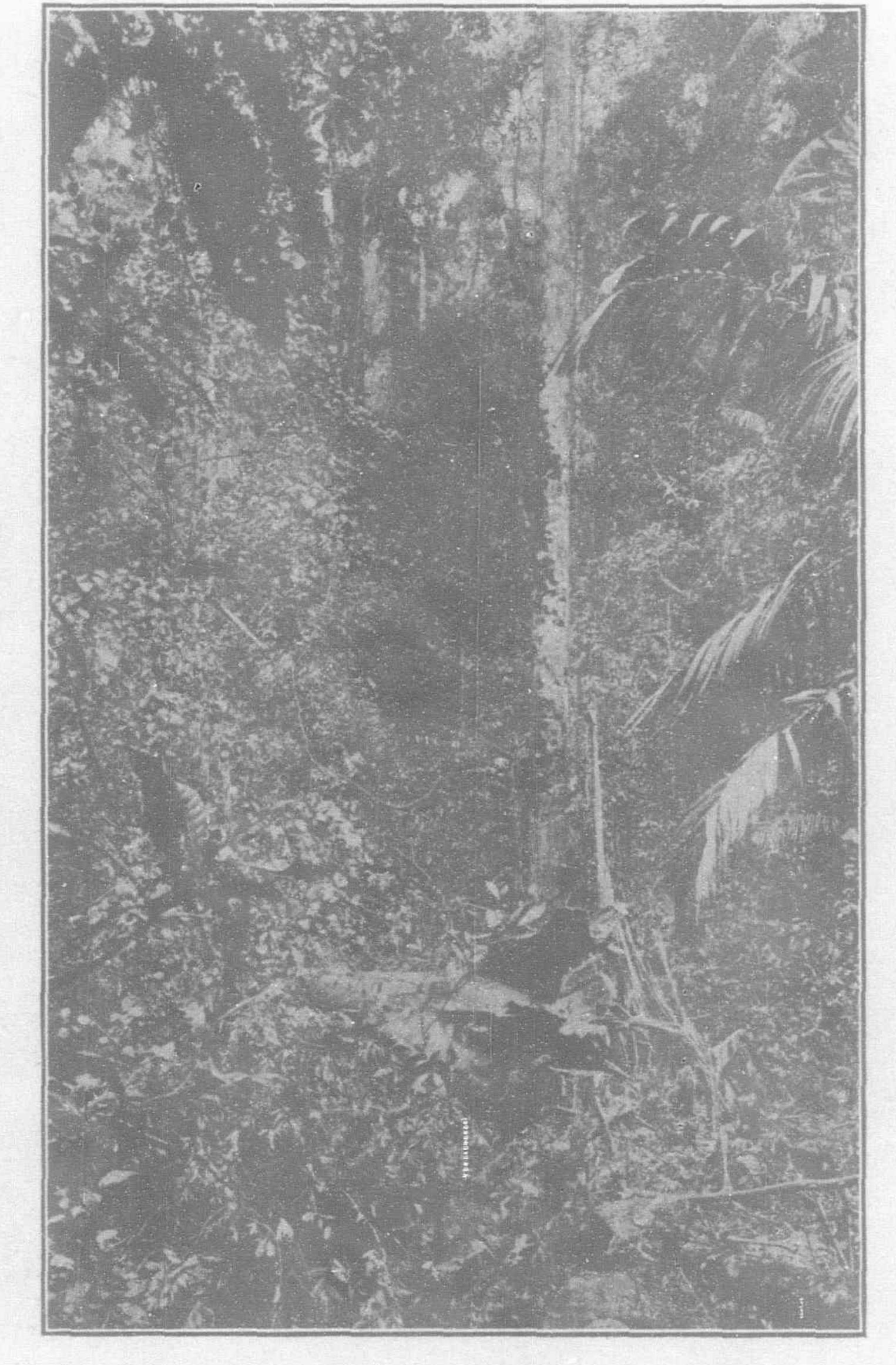
Owing to the limited extent of the areas where gutta percha trees have so far been found on most of the islands, the regions which produce gutta percha for the market at the present time are confined to the Islands of Mindanao and Tawi-Tawi. The accompanying map (No. 2) is arranged to show the places where gutta percha species have been found as well as to give some idea of the size of the districts producing the gutta percha now being exported. The exact or even approximate extent of these areas is difficult to calculate. Much has not yet been explored, and the information derived from the natives is vague and contradictory. The areas on the map are given conservatively and are known to produce gutta percha at the present time. Other territories will probably become known as our intercourse with the wild tribes inhabiting these regions grows more friendly and open.



TAPPING A GUTTA PERCHA TREE IN SUCH A MANNER THAT ALL THE MILK IS COLLECTED IN SHELLS
BENEATH AND NONE LOST. DONE BY MOROS IN TAWI-TAWI.



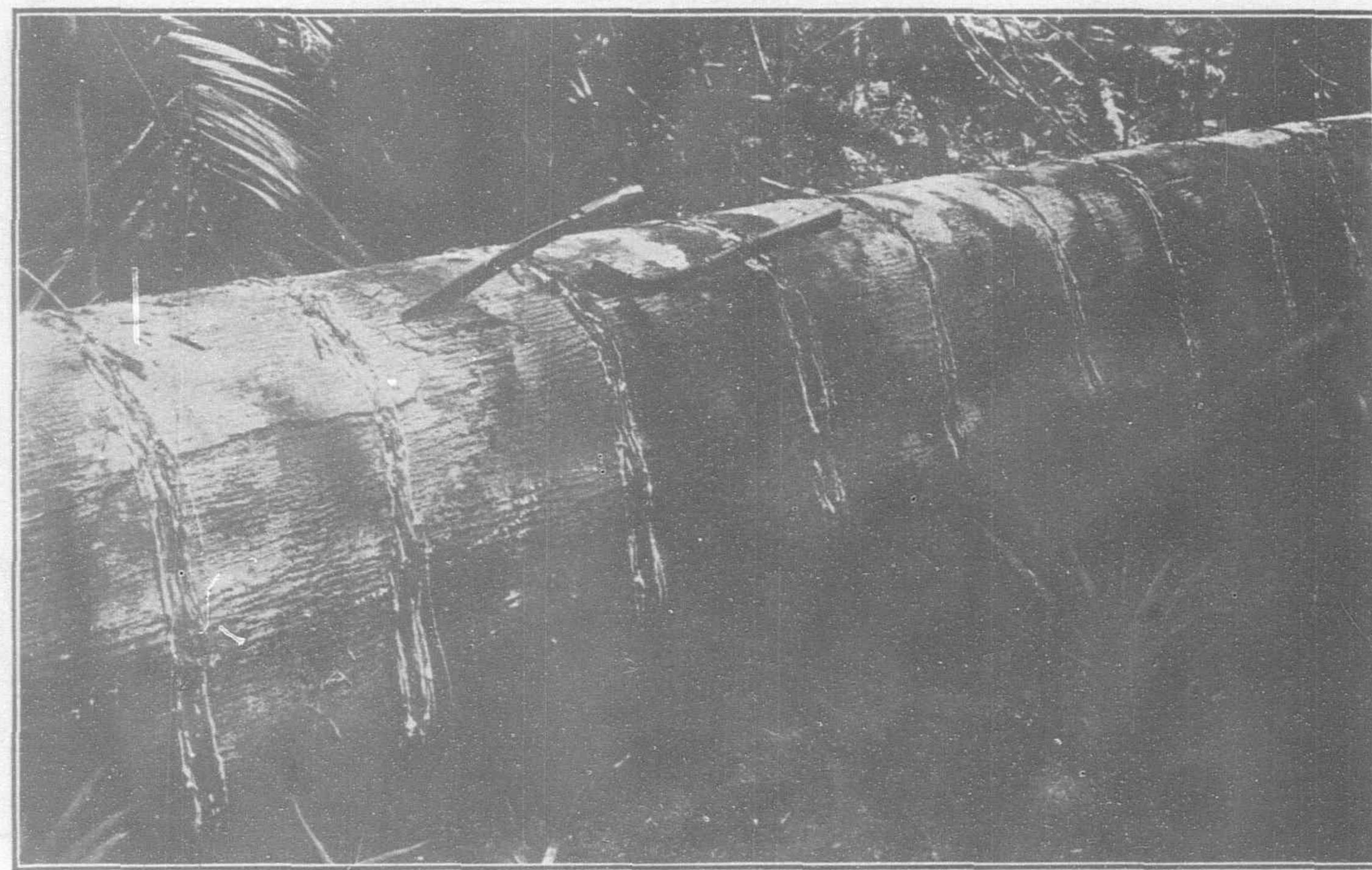
A GUTTA PERCHA TREE TAPPED IN SUCH A MANNER THAT THE FLOWING MILK IS NOT ALL ABSORBED BY THE CHOPPED-UP BARK, BUT MUCH OF IT IS LOST ON THE GROUND BELOW. TUCURAN, DISTRICT OF ZAMBOANGA, MINDANAO.



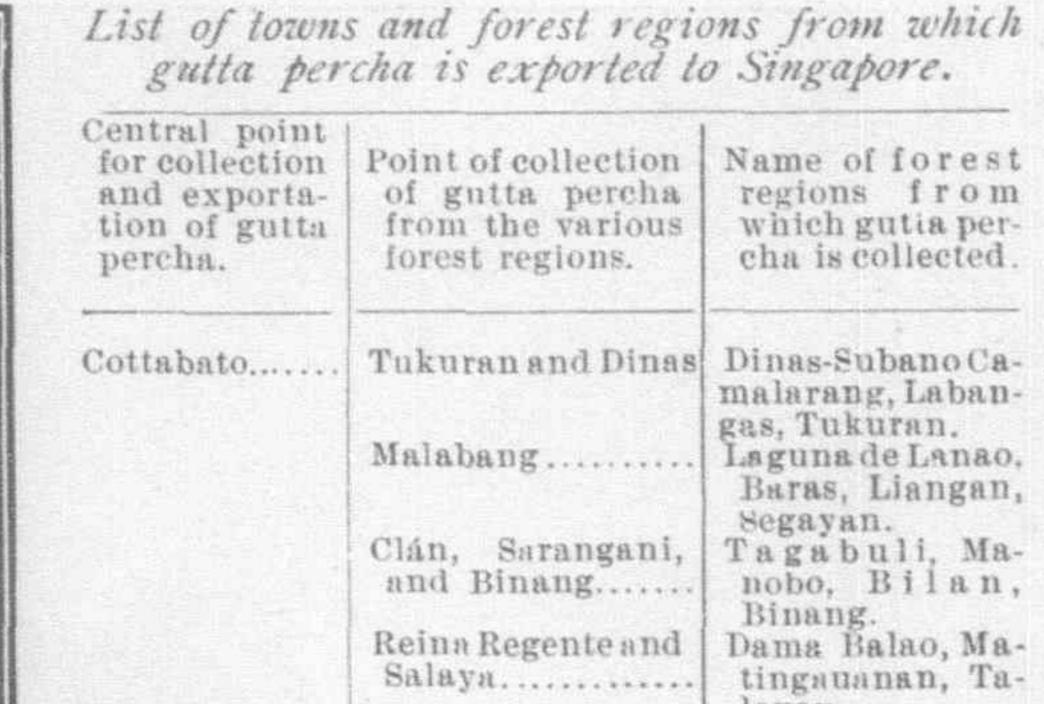
A LARGE GUTTA PERCHA TREE FELLED AND RINGED. NO OTHER GUTTA PERCHA TREE WERE FOUND GROWING WITHIN A LARGE RADIUS, AND NO SAPLINGS WERE OBSERVED. DISTRICT OF ZAMBOANGA, MINDANAO.

lavan.

Baluan, Curuan, Western and Talucsangi, Pu-erta Santa Maria, Dapitan, Misamis.



A LARGE GUTTA PERCHA TREE TAPPED IN SUCH A MANNER THAT THE FLOWING MILK IS ALL ABSORBED BY THE CHOPPED-UP BARK AND NONE ESCAPES, SIRURAY DISTRICT, MINDANAO.



Transshiped from Tawi-Tawi. Joló (Sulu)..... Zamboanga, or Siassi.

Zamboanga

Reina Regente and

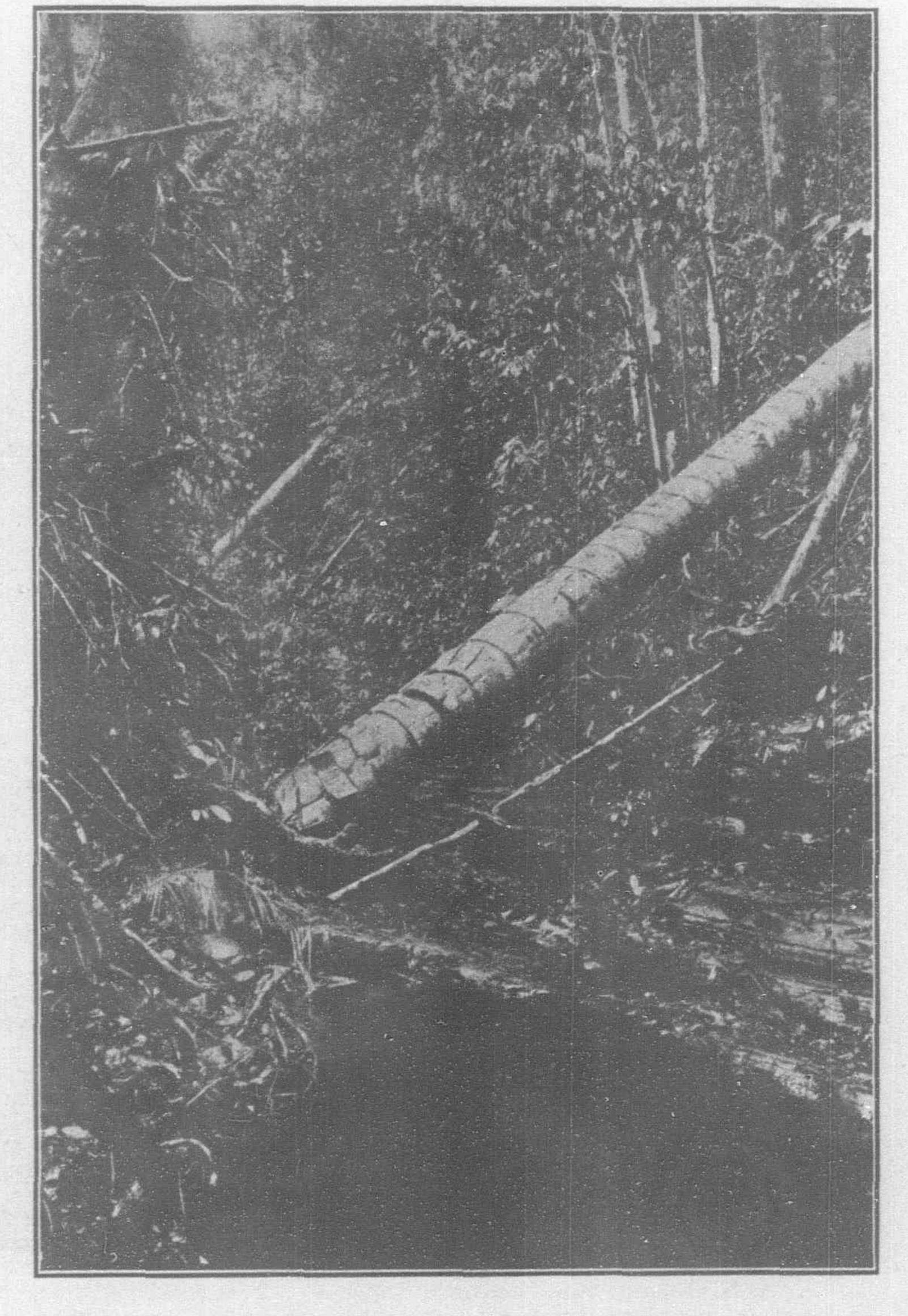
Salaya.....

Siassi, Balambing, Buan, Dajapatan. Do. Bongao

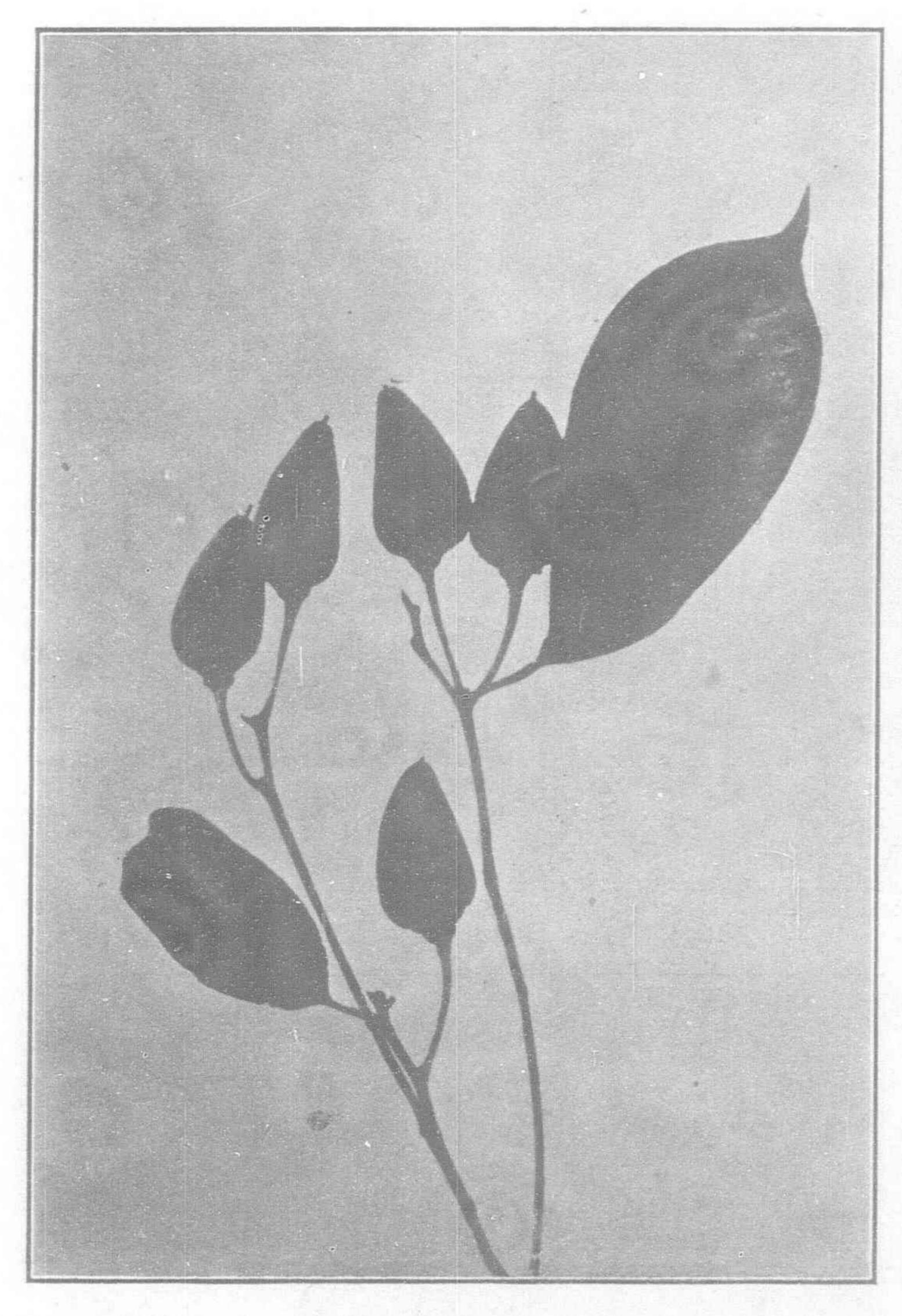
The Islands of Paragua (Palawan) and Balabac were found destitute of either gutta percha or rubber-producing trees, although long and careful search was made for them in many localities. Owing to their close proximity to Borneo, and the fact that botanically and geologically these islands are supposed to be more closely allied to Borneo than to the rest of the Philippines, it was confidently expected that

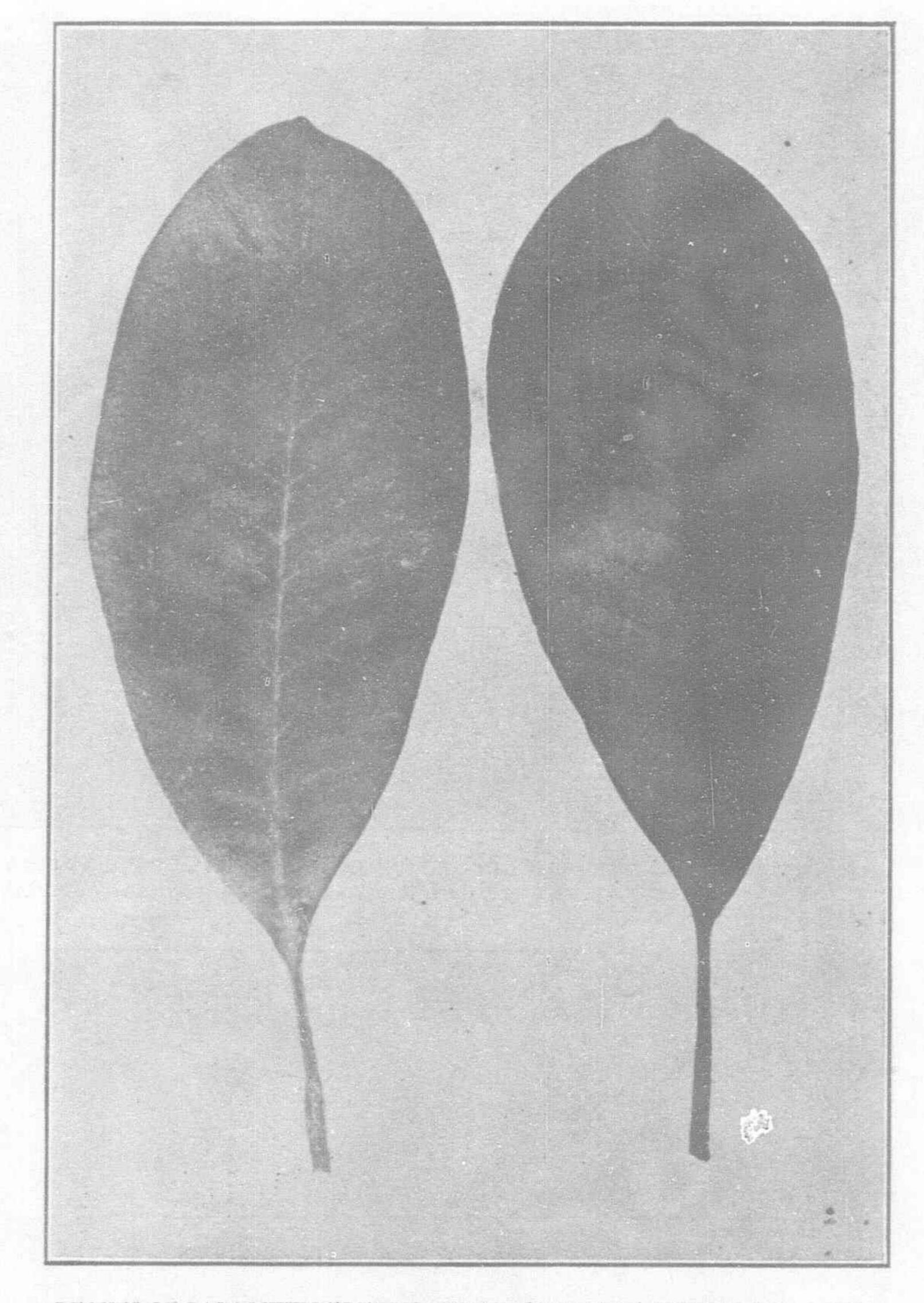


READY TO FELL A LARGE GUTTA PERCHA TREE FOR EXPERIMENTAL PURPOSES, DISTRICT OF ZAMBOANGA, MINDANAO.



A GUTTA PERCHA TREE FELLED AND RINGED BY THE SUBANOS NEAR CURUAN, DISTRICT OF ZAMBOANGA, MINDANAO





LEAVES AND FRUIT OF PAYENA LEERII BENTH. ET HOOK. FROM BUITENZORG, JAVA. FURNISHES SECOND GRADE GUTTA PERCHA.

LEAVES OF PALAQUIUM TREUBII BURCK, GROWN AT BUITENZORG, JAVA.

FURNISHES SECOND GRADE GUTTA PERCHA.

both gutta percha and rubber would be found there. The absence of these forest products is probably due to the uneven distribution of the rainfall with a long drought in January, February, and March.

IV. METHODS OF COLLECTING AND MARKETING.

(a) Collecting.

The question of what is the best method for collecting gutta percha has troubled owners and dealers from the beginning, and a satisfactory answer is still lacking. The trees are in the tropical forest regions of the Malay Archipelago, Borneo, and the Philippines, which are inhabited by the wildest pagan tribes only. These natives are the natural gutta percha collectors, and as a matter of fact have done all the collecting since the beginning. They evolved a method which answered their requirements very satisfactorily. As might be inferred, they wished the maximum yield of gutta percha from each tree with the minimum expenditure of work or time. That the method was extremely wasteful did not concern them nor were they bothered over the prospect of a bankrupt future.

The method, which is still in vogue from the westernmost part of Sumatra to the easternmost point of Mindanao, is, with various minor modifications, practically as follows: The tree is first cut down and the larger branches at once lopped off, the collectors say to prevent the gutta percha milk from flowing back into the small branches and leaves. As has been previously stated the milk or latex is contained in the inner layers of the bark and leaves, in small capillary tubes or ducts. To open these so as to

permit the maximum amount of the milk to escape, the natives cut rings in the bark about two feet apart along the entire length of the trunk. The milk as it flows out is collected in gourds, cocoanut shells, large leaves, or in some districts in the chopped-up bark itself, which is left adhering to the tree for the purpose of acting as a sort of sponge. After one or two hours, when the milk has ceased to flow, the contents of the receptacles are united and boiled over a fire for the purpose of finishing the partial coagulation. The warm, soft mass is then worked with cold water until a considerable amount of the liquid is mechanically inclosed. To further increase the weight, chopped bark, stones, etc., are added and the whole mass worked into the required shape with most of the dirt on the inside. The gutta percha gathered in this way well

repays the amount of work expended. The

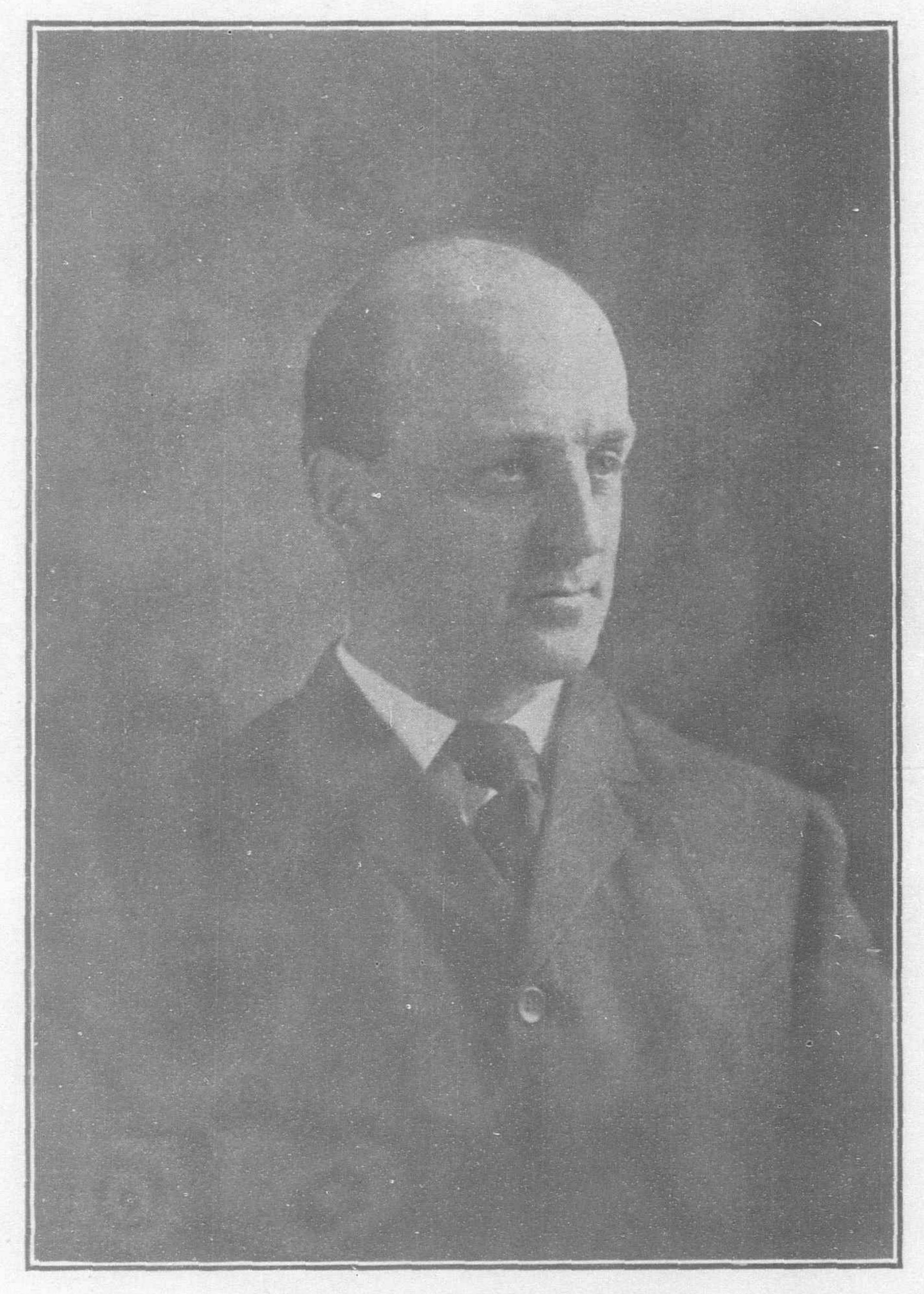
two vital defects of the method are-(1) The method is very wasteful, the yield from each tree being a small proportion to the total amount. What this per cent is has been investigated by scientists with the result that the figures differ widely. Remembering that the gutta percha milk is contained in capillary ducts and tubes, it will be seen that a considerable amount can not flow out on account of capillary attraction, no matter how much cutting is done. It very seldom happens also that a tree fall in such a way that all its trunk is exposed so as to admit of ringing on all sides. As a general thing from one-third to one-half of it is inaccessible to the process of ringing, and all the milk within this portion is consequently lost. Even the larger limbs are not deemed worth ringing

and consequently all the milk in them and in the leaves also goes to waste; to this must be added the considerable quantity spilled on the ground through carelessness and lack of enough receptacles for every cut or bruise from which the milk flows.

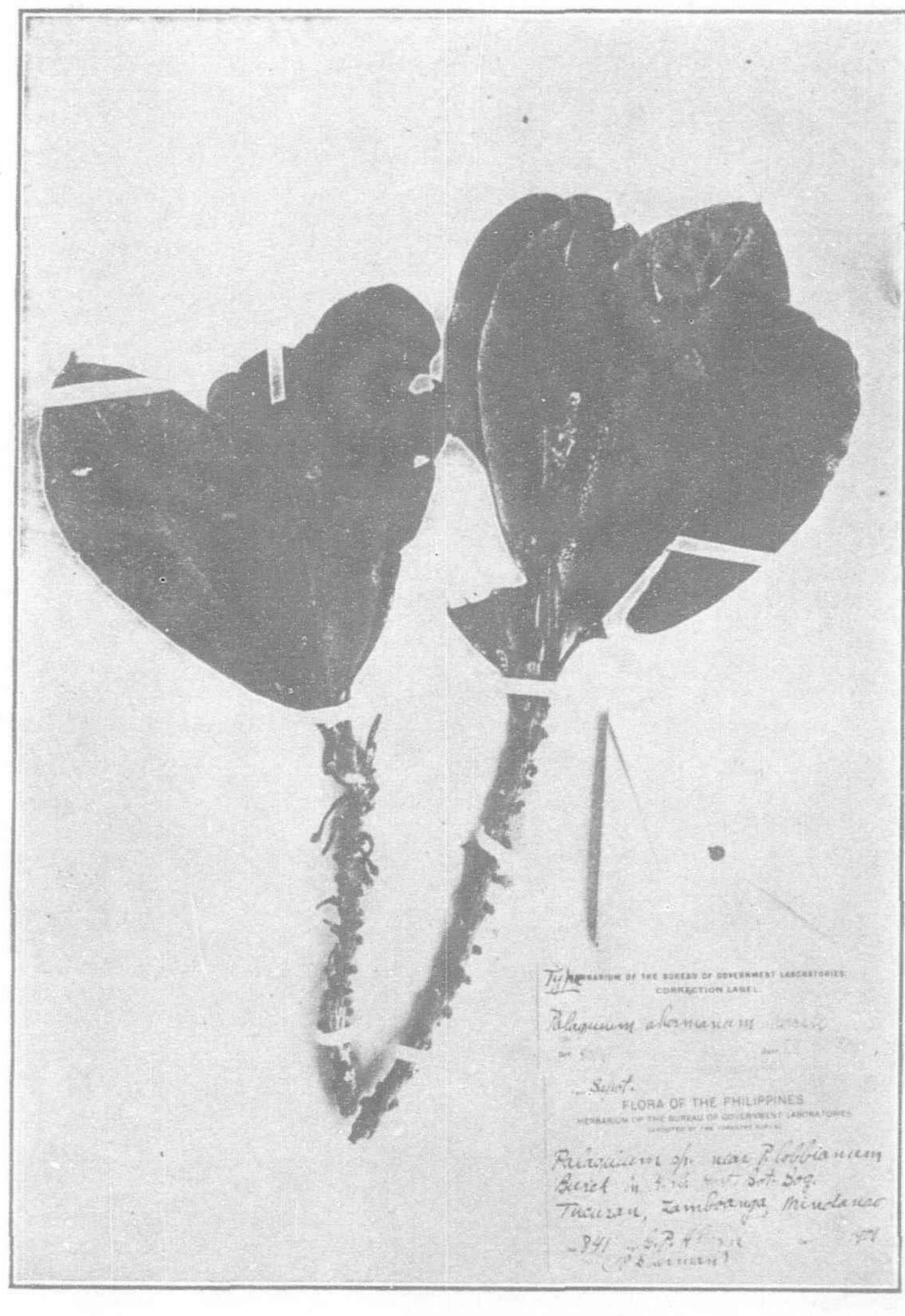
The method employed to find what percentage of gutta percha has been removed from a tree by the native collectors was to determine the per cent of gutta percha remaining in a given area of the bark, multiplying this by total bark area of the tree and adding 15 per cent of this amount for that contained in the bark of the branches and in the leaves.

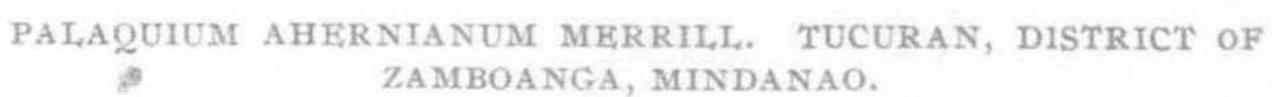
The amount which the native collectors secure from the average full-grown tree apparently varies according to the species, season, personnel of collectors, etc. Most authorities place the amount per tree at one-fourth of a pound. The director of the botanical garden in Penang (8) secured 1½ pounds of clear gutta percha from a large tree (Pal. gutta) estimated to be 60 years old. Wray (9) obtained somewhat over 2 pounds from a Palaquium gutta tree at least 100 years old, and 2½ pounds from one of an inferior species.

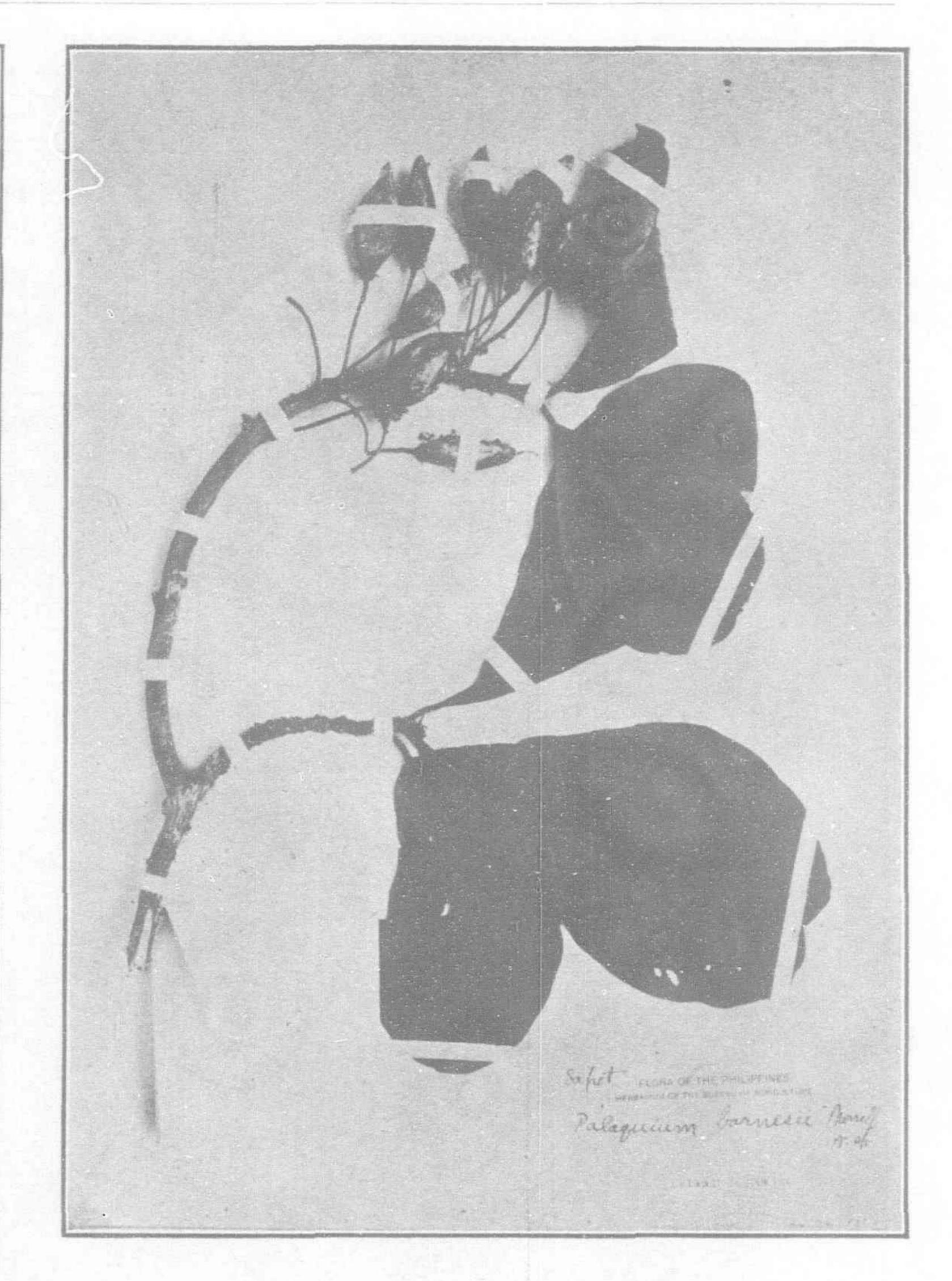
Burck (10) made some extended experiments in Sumatra and secured an average of less than I pound from full-grown trees, while Serullas (II) in Sumatra obtained almost I pound from a giant tree. Trees of inferior grade have been found to give as high as 8 pounds. Probably the best average obtainable is 3 pounds. In the Tiruray District of Mindanao I secured I pound of clean gutta percha from a tree I35 feet high and 5 feet 4 inches in circumference at the base.



HON. W. CAMERON FORBES,
Secretary of Commerce and Police,
Philippine Islands.







PALAQUIUM BARNESI MERRILL. ISLAND OF MASBATE.

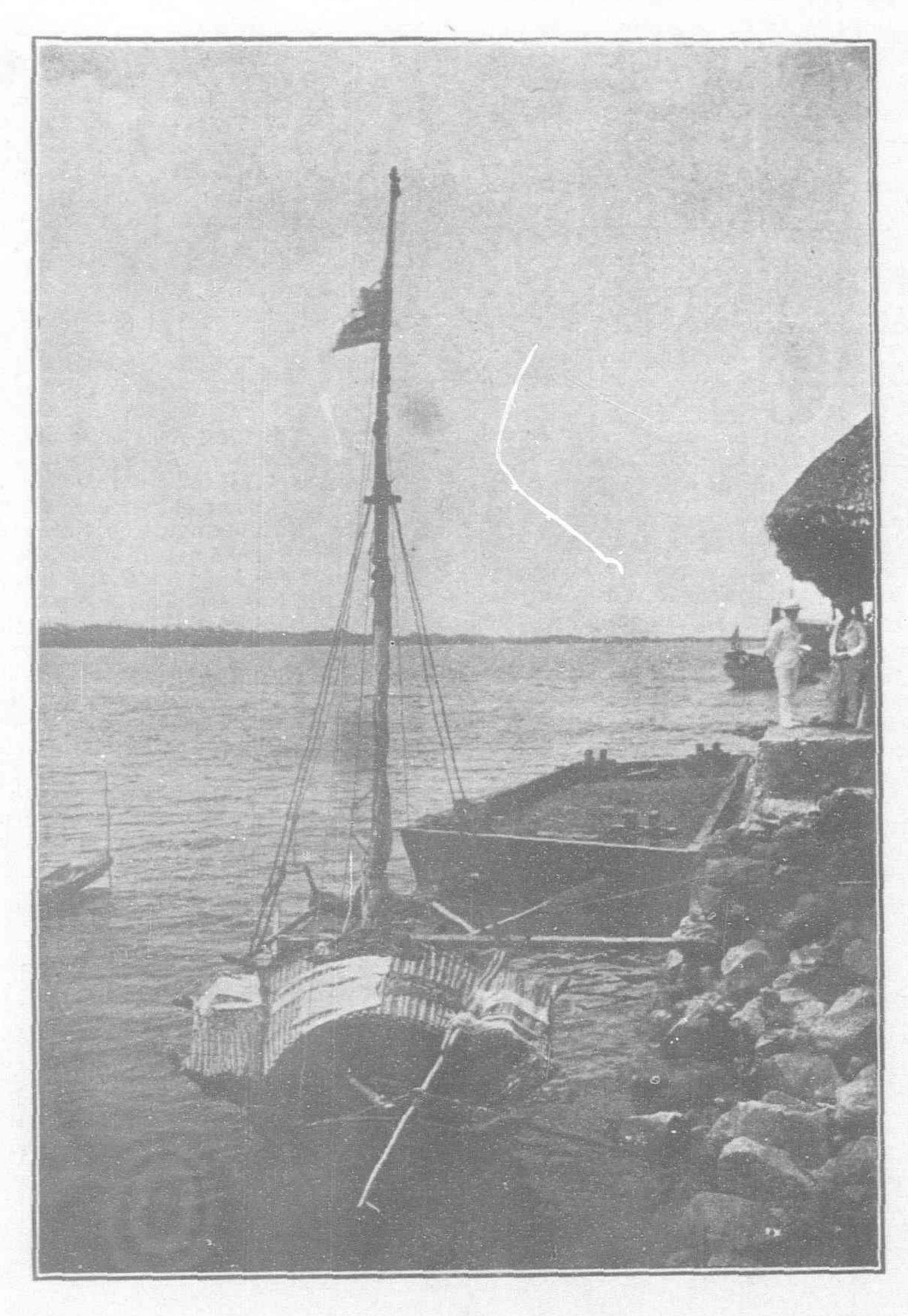
The work was carefully done by the natives. Taking a measured amount of the bark of this tree after no more gutta percha could be collected by the native method, and extracting all of the gutta percha which it still contained, it was estimated that after collection there still remained 61/2 pounds of gutta percha. Taking into consideration the fact that had the tree not fallen in such a way as to leave almost all of the trunk propped high enough above the ground to allow the milk to be extracted from the bark on the under side, the amount extracted would undoubtedly have been much less, or in other words ten times more gutta percha would have been left to rot with the tree than was taken from it by the natives. Other investigators have secured figures as large as these and some found that forty times more gutta percha was left behind than was secured by the careless collectors.

(2) It leaves the future unprovided for. It has been seen that the invariable practice of the native collectors is to fell the tree in order to extract the gutta percha. In some cases it has been reported that the stumps stool afterwards, and in course of time produce new trees, but it can be safely asserted that this is the exception and not the rule. Of those I have found cut down in the Philippines, none have ever stooled, though in one case I saw some of the roots of the stump alive long after the felled tree was well advanced toward decay.

It is fortunate that only the full-grown trees contain enough gutta percha to repay the work of felling, ringing, etc.; otherwise the complete extermination of the gutta percha forest would only be a matter of a year or so. On the other hand the felling of all the trees old enough to bear seed works to the same end with a somewhat longer time limit.



THE ENGLISH METHOD OF STARTING A GUTTA PERCHA PLANTATION. THE SEEDLINGS ARE PLANTED IN IRREGULAR ROWS. BUKIT TIMAH, ISLAND OF SINGAPORE.



A CHINESE MORO TRADING BOAT STOPPING AT PARANG PARANG, MINDANAO, FOR THE PURPOSE OF BUYING GUTTA PERCHA AND TAKING IT TO COTTABATO FOR EXPORTATION.

(b) Marketing.

Having been collected and put in marketable shape, the gutta percha is carried in baskets on the back of the collectors to the nearest water-way and thence by boat to the most accessible town, where, applying the description to the Philippines, it is exchanged for barter to some Moro, Chinese, or Filipino merchant (comerciante) living there for the purpose of dealing in all kinds of native products. From here it is shipped to one of the ports doing an export trade with Borneo and Singapore. The entire gutta percha trade is practically in the hands of the Chinese in the latter city, and they guard the secrets of boiling, working over, mixing, adulterating, and coloring the gutta percha for European markets most zealously. All who have tried to investigate their methods agree that there is no connection between the various grades and the different tree species, and that pure gutta percha from the species Palaquium gutta is no longer found on the market unmixed with inferior grades.

Strangely enough, I was unable to find in Singapore any statistics regarding the importation of Philippine gutta percha. The Chinese dealers denied receiving any, and beyond a few piculs noted in the annual import statistics, no mention of it was found anywhere. I afterwards ascertained that the gutta percha first goes to Sandakan and Labuan, in British North Borneo, and is there transshiped to Singapore, entering as North Borneo gutta percha.

Unfortunately the amount collected for exportation can not be given with any degree of accuracy, as the export statistics (12) include gutta percha with all other gums. It is known, however, that the amount reaches into tens of thousands of pounds.

V. LAWS REGULATING COLLECTING AND SHIPPING.

Considering the almost lawless way in which gutta percha is collected and marketed, it is pertinent to review briefly the few steps taken toward legislating on the subject. The English long ago realized that the gutta percha forests of the Malay Peninsula were doomed to destruction unless radical measures were taken to change the method of collecting. The first law passed was to prohibit the felling of trees in order to collect the guita percha. As the law never penetrated to the wild tribes of the interior where the collecting was done, it was not effective. As a surer method of stopping the destruction, a second law was passed which prohibited the exportation of gutta percha from coast towns in the Federated Malay States in which the English could, of course, exercise personal supervision. The result was that the exportation from those places ceased promptly, but the felling of trees did not stop, the export simply traveling northward by overland routes until it was outside of English jurisdiction, and from there it was shipped to Singapore. I can not find that anything effectual has been accomplished by the English or by the Dutch authorities in Sumatra and Borneo toward remedying the difficulty. It seems to be generally realized at last that wild natives can not be prohibited from doing things where there is no law nor show of authority. Certainly they will not cease felling gutta percha trees until some one can show them an easier method for collecting the same amount or more of the material, so long as gutta perchahasa market value. The English had the true idea when they took away its market value through prohibiting exportation. The only trouble was that the Malay States are on a peninsula and not an island. This law, if applied to the Philippines, might succeed better by reason of their geographical situation, but so far nothing of this kind has been tried here. As soon as the Forestry Bureau was established in 1899, the felling of guita percha trees was prohibited (13). Rules and regulations were provided for tapping the bark of the tree with a bolo in such a manner as to allow the milk to be secured without killing the tree. As the amount of gutta percha obtained by this process was much less than that secured from felling the tree, while the labor was fully as great and was dangerous be-



MORO SAILBOATS ("VINTA") USED FOR TRAVELING AMONG THE SOUTHERN ISLANDS.

sides (some trees being 70 feet to the first limb) the wild natives never practiced this method nor did they ever hear of it, and all the gutta percha so far exported has been at the expense of so many trees killed.

Islands such as Mindanao and Tawi-Tawi can not stand this for any length of time and already the gutta percha trees have entirely disappeared from the vicinity of the coast regions and of the large rivers. According to the forest surveys made so far in the Islands the average number of trees of I foot in diameter is between forty and fifty per acre, and considering the large number of species found in the forests the number of trees of any one species is generally placed at four or five. With this liberal allowance the forest acreage of the southern islands will probably supply gutta percha at the present rate of cutting for three or four years longer, but not for more than that.

It must not be supposed that scientific investigation has not been directed toward solving this vexed question of securing gutta percha in paying quantities without killing the trees, but before describing the results of this work, the chemical and physical characteristics of gutta percha as well as the prices to be realized for it must be considered in order to demonstrate the difficulties to be overcome.

VI. GRADES AND PRICES.

The prices governing the sales of all grades and kinds of gutta percha in Singapore, the chief market of the world, seem to be most arbitrary and uncertain. As a general thing they have increased continuously and steadily since the beginning of the industry.

Formerly the different grades of gutta percha were named from the well-known districts or shipping ports from which they came. An attempt was also made to designate the species of tree furnishing the product, and a further distinction was given as to quality. For instance "Koatei guta merah No. 1" was first grade of gutta percha from Palaquium gutta coming from Koatei while "Pahang white soondi No. 1" was first-grade gutta percha from Payena leerii from the Pahang district.

These names and gradings are still kept up as a matter of convenience for cable codes, etc., but the significance of the names is almost entirely lost, certainly as far as any indication of the tree species is concerned, and often as regards the district of production as well. The Philippine gutta percha for example has neither grading nor price in Singapore, and probably comes in under Sarawak white, red, etc.

As has been stated previously, the secrets governing the selection, boiling, adulteration, coloring, etc., of the various grades are closed and known to the Chinese exclusively. This is also true in the Philippines, though very little except boiling and cleaning is attempted before

shipping to Sandakan. Most of the Philippine gutta percha passes through three hands and the rise in price is quick and decided. My experiences in the gutta percha districts of Mindanao and Tawi-Tawi were to the effect that the wild native collector had to take about what he could get, which was on an average of \$10, Mexican, for a picul of 1621/2 pounds. Money was seldom paid, the usual thing being barter in rice, cloth, copper wire, cheap jewelry, beads, etc. It is needless to remark that the middleman realized a good profit on his merchandise. He in turn carried the gutta percha to the export towns and sold it to the Chinese at the rate of \$40 to \$80, Mexican, per picul of 1371/2 pounds. As this latter amount was the legal weight for a picul, his profits were increased by the additional pounds which he deliberately stole from the ignorant natives. The Chinese exporter pays \$5 to \$7, Mexican, per picul forestry dues (he being the only one of the three with a fixed residence and amenable to Forestry regulations) and exports the gutta percha to Sandakan or Singapore, where it probably brings \$100 to \$150, Mexican, per picul of 1331/2 pounds. There is no definite information on this subject, however, as Philippine gutta percha, as has been stated, is neither rated nor graded in Singapore. A year and a half ago when the best grade of gutta percha in the

Philippines was said by the Chinese of Cottabato to be worth \$80 per picul, the following analyses of Singapore gutta perchas were made by Van Romburgh and Tromp de Haas (14)

GRADE.	Dirt.	Water.	Resins.	Gutta	Price per picul
Bila (red) soondi	33.6 37.1 2.1 19.0 0.7 21.7 2.0 1.0 14.8	P. ct. 7.0 6.8 5.8 3.9 8.6 5.1 4.1 4.4 3.8 0.5	P. ct. 31.4 25.5 53.8 35.5 36.5 46.2 53.6 34.8 12.8	38.3 41.6 54.2 44.7 47.7 41.0	\$150 135 180 350 360 370 380 500 500

Mexican currency.

According to these analyses the best grades of Philippine gutta percha may well rank with any of the first four on the list, especially as my chemical and physical tests show the high grade of the gutta in them.

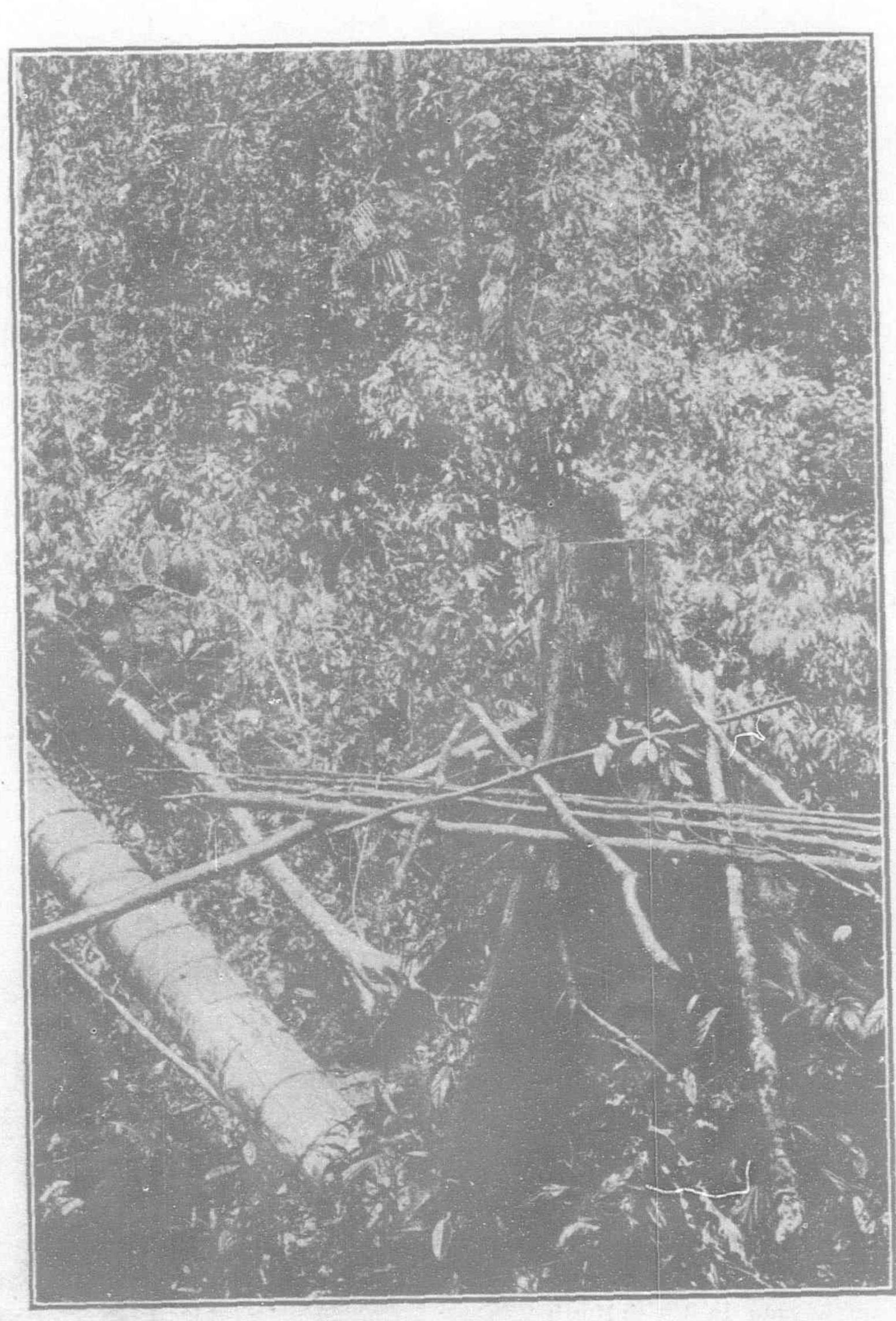
Another example of the difficulty in dealing with the Chinese gutta percha merchants in Singapore is the experience of an American merchant of Manila, who, about this time, took a considerable quantity of the best grade of gutta percha from Mindanao over to Singapore by way of speculation. He was only offered \$8 per picul by the leading merchants there, and it was not until they found out he was not anxious to sell at all but would ship the product to America, that they

finally closed with him at \$70 per picul. How much the gutta percha was really worth he never found out.

The evidence then all goes to show that the price of Philippine gutta percha jumps from about \$8 a picul in the mountains where it is gathered by the wild tribes, to \$150 in Singapore. Thus the native collectors get almost nothing, the Government about as much, and the Chinese the rest. The Chinese might possibly get even higher prices by exporting direct to London or America, though apparently that has not yet been tried.

It is stated on good authority that the Chinese in all their manipulations for preparing the gutta percha for the European market go solely by smell, color, toughness, and the softening and hardening test in hot, then cold, water. At any rate they are certainly very skillful in the work, although careful inspection of the above table, as Van Romburgh points out, would tend to show that their prices were not at all warranted by the analyses. So long as the collecting of the gutta percha is all in the hands of wild natives and the manipulating and marketing controlled by the Chinese, we can not hope to have the gutta percha trade on a fair business basis. However, as the supply steadily decreases while the demand and prices increase, the attention of Governments and manufacturers will more than ever before be directed to the subject and perhaps the hoped-for relief will come through scientific propagation of gutta percha trees and scientific collecting of the gutta percha.

(To be continued.)



STEM OF GUTTA PERCHA TREE, SHOWING SCAFFOLDING ERECTED BY SUBANOS FOR THE PURPOSE OF FELLING THE TREE. SOME ROOTS WERE STILL ALIVE, BUT NO STOOLING WAS APPARENT. DISTRICT OT ZAMBOANGA, MINDANAO.

MINING REVIEW

RAUB

General Manager's report for the month

ending July 16:

The mine measurements and assay results of prospecting work, prepared by the mine manager, show a total of 280 ft. for the period (4 weeks) under review, made up of 152 ft. driving and 128 ft. crosscutting, as against a total of 233 ft. for the previous four weeks.

Plant and Machinery .- The renewals of broken parts for electric hoist have been delivered, and a satisfactory trial run has been made. The electric pumping engine was started and run for several days before connections were made with the bob, to get bearings in perfect order. It gave entire satisfaction. The new 12 inch pump is now complete, the main rods having been connected to the bob, and has also been put to the test. The whole started without a hitch. This preliminary run was made at the maximum speed and stroke, without the pole being attached, so as to get everything in smooth working order. The results of the trial runs promise great economy in the future working of the mine, which will be more especially felt in the wet season.

Stamps working .- 40.

Period of work. -28 days, less lost time, 1.33 days (32 hours), of which 7 hours was due to lightning, and remainder to clean up. Ore milled.-Koman, 3071T; Hitam, 79T;

Jellis, 418T. Total, 3568T.

Mill duty .- 3.34 tons per stamp per 24 hours. Amalgam yield .- 1497 oz., giving 491.45 oz.

melted gold=33.23°/0. Bullion yield per ton.-2.75 dwt=68.240/0

of contents.

Bullion fineness average. - 925.

Mercury loss .- 3.95 lb. per 100T milled= 4.13 oz. per oz. bullion.

Tailings assays.-1.28 dwt=31 760/o contents. Remarks .- This constitutes a record both for low value and large tonnage milled.

ESTIMATED COST SHEET, 4 WEEKS ENDING JULY 16.

European	Salaries Developm	ient	702.00		\$5,274.59
Wages	Ore raisin Surface		7,086.13		
					11,045.53
Timber,	fuel, and c	harc	coal		1,046.40
Petties		***	***	***	416.18
Royalty	***			***	491.70
Stores	4 + 4	444	***	1 - 4	2,670.36

\$20,944.76 Cost per ton, \$5.87=2.96 dwt.

EXPENDITURE ON CAPITAL ACCOUNT.

Plant and Mado	chinery,	Koman Cyanide		609.56	
do		Sempam		97.20	
Furniture		***		424.45	
Buildings		***		162,29	
Development	***			169.65	
New main sha	ft		***	1,624.84	

Remarks .- For the first time, our working expenses have been brought below 3 dwt., notwithstanding a high exchange and the inclusion of Government imposts. We hope still to make some reduction when we get the full benefit of our electric power; but, of course, the margin for possible reductions is becoming less, and it is not to be expected that we will ever achieve anything below 21/2 dwt. But even 3 dwt. is well under half the average cost on the Rand, where they calculate on the "short ton," which is 120/0 less than ours.

C. G. WARNFORD LOCK,

Gen. Manager.

The Raub Company, having their electric power now largely extended, are selling their steam boilers, engines, pumps, and hoists.

F. M. S. MINING LAW

According to the Rules just passed, says the Perak Pioneer, under the recently passed mining enactment, the premium payable on State land disposed of by public auction or tender, will ordinarily be the price bid or tendered by the successful tenderer. Premiums on State land disposed of otherwise than by auction or tender has been fixed at \$10 per acre. The charge for an individual mining license is fixed at \$5. Survey fees on an average range at \$2 an acre, with a minimum of \$25; provided, however, that survey for which fees have been deposited, at rates previously in force, may be carried out at such rates.

Careful and elaborate rules have been promulgated for the carrying out of mining opera-

tions under the new enactment.

RUBY MINING IN BURMAH

In the course of an article describing a village in the ruby mining district in Burmah, a correspondent of the Pioneer says that the mines are holes about 2 ft. sq., sunk into the ground to a depth of up to fifty or sixty feet, the sides supported by posts at the corners and branches of small trees fastened against the sides by stout sticks, to keep the earth from

falling in.

The miner, wearing a tin pot like a bluntended cone on his head, sits in what one would imagine to be a most uncomfortable attitude in a corner and digs between his knees in the opposite corner, and sends up the earth or byon, as the ruby-bearing earth is called, in small baskets let down from above. The tin hat, be it known, is in no way for security from falling stones or debris; it is entirely to keep the wearer's hair dry, and though a man will permit himself to be splashed freely by his neighbor, yet he uses most violent language if by any chance he gets a drip of water or mud on his back hair. The apparatus for raising and lowering the buckets and baskets is simple in the extreme. A stout bamboo post about twenty feet high, and called a maungdine, is fixed upright in the ground at a convenient distance from the pit or dwin, and a long, thinner bamboo pivoted horizontally into the upper end of it so as to project an eighth from the mine, and the long arm towards the mine. From the end of the long arm hangs a long cane fastened to a longer thin bamboo, the latter ending in a double hook, and from the short end hangs a basket of stones. The buckets are raised by the inner arm with its hook, while the stones counterbalance the weight. Usually three men work in a dwinone down below, one hauling up the baskets, while number three piles up the byon.

The digger uses a straight, broad-bladed, very strong instrument about 2ft. 3in. long, which also comes in useful when climbing up or down the pit. The buckets are shallow and circular, with loop cane handles. When enough byon has been piled up it is taken off and put into stone-paved, circular enclosures under a fall of water, and shovelled about with a mattock till the mud and clay is washed away, and the stones are all collected in a deep hole at the end of a narrow channel. These are then strained, then sieved, and finally sorted, and all rubies or sapphires placed in a little bamboo cup full of clean water, till the wash is over. They are then transferred to a little professional calico bag, which every mine-owner carries, and are finally transferred to the unclean hands of the money-lending fraternity, who flock round in crowds on the bazaar days to buy any stones found during the week. With good byon one wash will often bring forth from Rs. 100 to Rs. 150, but there is often a net result of precisely nil, while, of course, there is always the chance of netting a stone worth a lakh of rupees. With such great division of chances, it is perhaps not to be wondered at that the miners are intensely superstitious. No man ever goes down a dwin without a short prayer to the local nat or spirit of the dwin, and several words are absolutely taboo in or near the mines, as supposed to annoy these fairies.

MINING CONCESSIONS, KOREA. - The Belgian Minister at Seoul has stated to the Korean Foreign Office that, notwithstanding the right of gold mining in Korea having been claimed by him, all privileges concerning waste lands, forests, and mines had been granted to the Korean Agriculture and Mining Co. He asks to be shown the Regulations of the Company and the true facts of the matter.

COCHIN-CHINA'S MINERAL INDUSTRY

Mr. Vice-Consul J. L. O'Connell, in his report dated Saigon, March, states:-

The coal mines of Annam are now being worked. Nong-Son mines give satisfactory results; the average output is said to be about 100 tons per diem.

The "Société Francaise des Charbonnages du Tonkin" extracted, in 1902, 316,618 tons of coal, representing a value of about £ 120,000.

The Kebao mines in 1902 produced 1,200 tons, of a value of £480.

TRONOH MINES

The report of the Tronoh Mines presented at " the annual meeting at Redruth, on July 2nd, contains the following:-

During the year 1,130 tons of tin were sold, realizing £77,836:18:9, the cost of mining in producing the ore being £43,968:12:6, while the tribute paid to the present holders of the leases on which the Company pays royalties, amounted to £5,313:16:4. After writing off £4,888:3:7 for depreciation of plant, etc., and providing for the payment of Income Tax, a net profit for the year of £18,525:15:11 was shown. Out of this sum dividends at the rate of 10 per cent on the subscribed capital of the Company have been declared and paid, and a balance of £6,495:7:2 carried forward.

The tin returned during the year represents an increase of 3561/3 tons, but the mining costs also shew an increase per ton in consequence of the present Manager having decided to work the mine on a different system to that adopted by those who preceded him. The average cost of production during the past year has been £48 per ton of tin; but, as the development work has now been completed, the Directors anticipate that in future the tin will be returned at a much lower rate.

During the year a considerable amount of development work has been carried out, and large quantities of karang (tin-bearing ground) have been opened up.

OIL WELLS IN CHINA. - In certain parts of Chekiang there are many petroleum wells, which have been prospected by the foreign mining experts appointed by the Pao Chang Kung Tse, and, according to their opinion, these wells are rich with oil, and will yield an abundant supply when developed by the right process.-Eastern Times.

GOLD MINE, KWANTUNG .- As will be remembered, the gold mine at Tseng Chenghsien, Kwantung, has been prospected by a foreigner, and, according to the sample of ore analyzed, the mine is rich with gold. Consequently the foreigner wanted to sign a contract with the natives by force, with the sole object of developing the mine, but as this was steadfastly refused, he then tried to tempt them with money. It is now heard that the gentry class have petitioned to the local authorities, praying that the mine may be under official control.—Sin Wen Pao.

KECHAU GOLD FIELDS .-- During July, the Kechau Gold Fields Co.'s mill ran for 20 days, crushing 300 tons of stone for a yield of 107 ounces smelted gold. The mill was stopped till 8th July, owing to the breaking of an engine crank shaft.

Coal, Mine Abandoned, Manchuria.—A Yingkow telegram to the Tokio Asahi states that the Russians have recently ceased to work the coal mine at Wuhkishan, about eight miles from Mukden, and have sent home the greater part of the mining machinery. There are three forts there, and they are guarded by 1,000 Russian troops.

COAL MINES IN CHEKIANG.—According to the Tokio Asahi's Peking correspondent, certain Chinese merchants in Chekiang province have recently established a concern called Paochang, with a capital of 5,000,000 taels borrowed from Italian capitalists, and have obtained permission to work four coal mines in the same province. These merchants have now applied for permission to work two other mines in Hanchow and Huchow. The Chinese authorities have, it is said, not only refused the request, but have placed certain restrictions on the working of the four concessions previously granted to the concern.

COAL DISCOVERY, ADELAIDE.—Coal has been discovered within a few miles of Adelaide. The locality of the discovery is on the other side of Medindie, on private land, and shows a seam of brown coal, 30ft. wide. It was struck in sinking a deep well, and work has been going on for some time.

Gold Mine, Anhui, China.—A Peking telegram to the *Tokio Asahi* states that a provisional contract for the joint working of the gold mine at Chienping in Anhui has been concluded between the Chinese authorities and some Belgian capitalists. This mine has hitherto been in charge of Viceroy Yuen and some other high Chinese officials, who, owing to the scarcity of funds, have hitherto experienced great difficulty in the conduct of the work. Some Belgian engineers are now inspecting the mine.

TIN EXPORT FROM JOHORE.—The quantity of tin ore exported from Johore, including Muar and Batu Pahat, for the year 1903, is 7,868 piculs, and the total revenue derived therefrom is \$49,342.15.

When it is considered that it is only ten years ago or so since any real attempts to work alluvial tin were made, the gradual increase denoted on the above figures gives promise of further improvement as the inland country becomes opened up. To this the construction of the new railway and the formation of small settlements along the line will materially contribute.—S. Free Press.

The Burma Ruby Mines Co., Ltd., has secured an extension of the mining lease for a further term of twenty-eight years.

International, Tin Co., Singapore.—We are informed that the International Tin Company has closed its offices at both Kuala Lumpur and Ipoh, and in a short time intends closing its Singapore office in Battery Road. It will be remembered that the Company started business in these parts for the purpose of shipping tin ore to America. Their intentions, however, were frustrated by the Government prohibiting the exportation of tin ore except under a very high export duty.—Straits Times.

DUFF DEVELOPMENT COMPANY

The second annual meeting of Duff Development Company (Limited) was held on June 30, at the Cannon-street Hotel. Major G. Wemyss presided, and sketched the company's gradual emergence from their recent financial difficulties. They had raised over £57,000 of cash since April 1. He referred to the issue of the Dredging Company, and as to their prospects generally in mining and dredging. He then went on to say as to the general prospects of the Company:—

"Hitherto we have devoted our energies to the exploitation of those two propositions; but,

altogether apart from them, we have valuable sources of revenues which we have not yet tapped. We are now beginning to do so, and we have already made a start, in a small way, to collect our dues in connection with the various farms and export duties. This work can only be done very gradually, and one of the first duties of our managing director in the East, on his return to Kelantan, will be to draw up a proper organization for the collection of the revenues due to us under the terms of our concession. This brings me to our programme for the present year. As regards mining the company has obtained the services of Messrs. Charlton & Co., who will act as their consulting mining engineers in London. Messrs. Charlton & Co., on behalf of the company, will select and send out an experienced mining engineer to take sole charge of all the mining operations in the concession. He will report generally on the present situation, and will advise as to further operations and developments. All mining reports will be submitted to Messrs. Charlton & Co. for their further report. In the meantime our energies will be chiefly concentrated on the development of Manson's lode and the galena lode, with Dangerfield's Discovery in addition, if the assays taken across the reef at the 80 ft, level prove satisfactory. These three reefs are in the same neighborhood, and can be easily supervised and worked from one center. Sinking will be resumed on Manson's lode as soon as the large pump, now on the way, is erected. Mr. Duff has explained to you in his report the value of the developments already done on this lode, and the very great amount of ore which a little more sinking may expose. Provided that this lode maintains its present values in depth, we shall have in it alone an immensely valuable proposition. What applies to Manson's lode applies almost equally well to the galena lode. Sinking is proceeding, and in the course of the next few months we should know whether the lode is going down in depth. If it does, and if it maintains its values, we shall have another proposition rivalling Manson's in its future possibilities. As regards dredging, we shall continue our prospecting operations on the same sound system as hitherto; so that when the success of the Kelantan Gold Dredging Company (No. 1) is established, we may be in a position to float off Company No 2. As to our prospects generally, we have cheap transport, cheap and efficient labor, cheap fuel, and a plentiful water supply. We have a concession of 2,005 square miles, a large portion of which we know to be heavily mineralized. We have in Manson's and the galena lode two propositions already of great value, but which give promise of developing into propositions of the first rank. We have several other reefs which have proved to be goldbearing, but which are awaiting further development to prove whether they are payable. We have a very large dredging proposition, the value of which is practically beyond doubt. We have several administrative sources of revenue at present untapped, and, finally, we have cash resources sufficient for carrying out the programme I have roughly sketched. Under the circumstances, I think we may congratulate ourselves on our present position and on our future prospects. We have an exceptionally strong body of shareholders; but if those shareholders wish to make the most of the valuable property they possess, they will have to show a little more confidence and give a little more support in the future than they did on the occasion of the recent issue. In connection with our future prospects in Kelantan, I would recommend to your notice the report of the Resident-General of the Federated Malay States for the year 1903, which has recently been issued. If you will remember, when you read it, that the State of Kelantan marches with the Federated States of Perak and Pahang, you may realize the great potentialities of our concession. In conclusion, I think you will be glad to hear that we propose to issue to shareholders a small map of the concession, which we hope will enable them to better understand the scope and importance of the Company's operations."

KELANTAN GOLD DREDGING (NO. 1)

The first ordinary general (statutory) meeting of the Kelantan Gold Dredging Company (No. 1) (Limited), was held on 26th July at the Institute of Chartered Accountants, Moorgate-place. The Chairman (Mr. G. Wemyss) said:—

As the company was only registered on June 3, there was little or no information to impart to shareholders as to work done to date. They had been informed that the large dredger which the company is to take over from the Duff Development Company was approaching completion, and, when complete, the Duff Development Company would send it up stream, and deliver it on the Kelantan Company's own ground. Should no difficulties arise, the first dredger ought to be at work by the end of September. Seven firms were invited to tender for the building of four more dredgers-two to be built at once and two more later on, at the company's option. As a result of these tenders, an order has been placed for two dredgers of the type of the one from the Duff Development Company. These two dredgers were to be ready for shipment in 11 and 14 weeks respectively. The directors propose to defer placing the order for the second pair until they had obtained results from the No. 1 dredger. If they were able to do this by the beginning of November, it was possible that they might have all the five dredgers at work by the end of next year. The successful working of the Duff Development Company's prospecting dredger, lower down stream, was a happy augury for the success of this company's proposed operations higher up.

F. M. S. TIN OUTPUT

The output of tin and ore in the Federated Malay States, during the seven months of the current year, has not increased, compared with the corresponding period of the previous year. Only in Negri Sembilan has there been an increase in the export of tin, the amount being 3,598 piculs, or 214 tons; and that State and Pahang show a decrease in the output of tin ore. Jointly the decrease amounts to 5,384 piculs, or 320 tons. In the four States, however, the decrease in the output of the metal, calculating the ore at 68% of the gross weight, amounts to 3,289 piculs (190 tons); and there is a corresponding decrease in the amount of duty collected by the Government, viz., \$1,108,486.10, a very considerable decrease compared with last year, the low price of tin of course being responsible for this; but the Government have realized \$467,626.39 more than they estimated from this source of revenue. The district of Batang Pahang exported from Telok Anson, 574-33 piculsof wolfram, and 54.88 piculs were exported from Seremban. The average amount of duty per bharra in the four States works out at \$30.75.

KELUBI MINING COMPANY

The Kelubi Tin Mining Company, which had to go into liquidation and recently paid its first and final dividend of 51 cents a share, owned 500 acres of land in the Suar and Tempul watersheds, Ulu Pahang district, and had a capital of, it is believed, one hundred thousand dollars. The rivers in question were originally obtained by Mr. John Carroll on a prospecting license, with the right to select 500 acres to be held under lease. Prospects were at one time distinctly encouraging, and it was proposed to start hydraulic working on a part of the concession. Tin used to be regularly exported by the Kelubi Company, but in small quantities. Both the Suar and Tempul are tributaries of the Telom, and it was said that the lode which Mr. A. N. Dumaresque, the Company's manager, discovered in 1900 ran through the Suar to the adjoining Serau river. The Tempul is a very small stream, only practicable for sampans, while the Suar is a much larger river, the "ulu" of which was formerly worked for both gold and tin by Chinese and Malays .- Straits Times.

FINANCIAL NEWS.

HONGKONG AND SHANGHAI BANKING CORPORATION

The seventy-eighth report of the court of directors, presented at the ordinary halfyearly general meeting of shareholders at the City Hall, Hongkong, on Saturday, the 20th August, is as follows:-

Gentlemen,-The directors have now to submit to you a general statement of the affairs of the bank, and balance sheet for the half-year

ending 30th June, 1904.

The net profits for that period, including \$1,417,366 08, balance brought forward from last account, after paying all charges, deducting interest paid and due, and making provision for bad and doubtful accounts, amount to \$3,520,374.81.

The directors recommend the transfer of \$500,000 from the profit and loss account to credit of the silver reserve fund, which fund will then stand at \$7,000,000.

They also recommend writing off bank prem-

ises amount the sum of \$200,000.

After making these transfers and deducting remuneration to directors, there remains for appropriation \$2,805,374.81, out of which the directors recommend the payment of a dividend of one pound and ten shillings sterling per share, which at 416 will absorb \$533,333.33.

The difference in exchange between 416, the rate at which the dividend is declared, and 119 15-16, the rate of the day, amounts to \$779,487.17.

The balance, \$1,492,554.31, to be carried to new profit and loss account.

DIRECTORS.

Mr. C. Michelau, Hon. C. W. Dickson, and Mr. C. A. Tomes having resigned their seats on leaving the Colony, Mr. A. Haupt, Hon. W. J. Gresson, and Hon. R. Shewan have been invited to fill the vacancies; these appointments require confirmation at this meeting.

AUDITORS.

The accounts have been audited by Mr. W. Hutton Potts and Mr. A. G. Wood, the latter acting for Hon. C. S. Sharp, who is absent from the Colony.

This abstract of assets and liabilities of the Hongkong and Shanghai Banking Corporation accompanies the report:-

accountantino our release.	
LIABILITIES.	\$ c.
Paid-up capital	10,000,000.00
Sterling reserve fund	10,000,000.00
Silver reserve fund	6.500,000.00
Marine insurance account	250,000.00
Notes in circulation:-	
Authorized issue	
against secur-	
ities deposited	
with the Crown	
Agents for the	
Colonies \$10,000,000.00	
Additional issue	
authorized by	
Hongkong Or-	
dinance No. 19	
of 1900, against	
coin lodged	
with the Hong-	
kong Govern-	
ment 4,893,352.00	
	14,893,352.00
Current account:-	
Silver \$76,204,028.31	
Gold, £1,939,613	
8s. 5d.= 21,851,473.55	
	98,055,501.86
Fixed deposit:-	
Silver \$46,382,951.01	
Gold, £4,878,546	
IIS. 9d.= 55,045,256.01	
	101,428,207.02
Bills payable (including drafts on	
London bankers, call loans and	
short sight drawings on Lon-	
don office against bills receiv-	
the contract of the contract o	The second secon

able and bullion shipments)... 15,347,670.51

Profit and loss account...... 3,520,374.81 Liability on bills of exchange rediscounted, £5,940,540 3s. od., of which £4,107,740 os. od. have since run off.

\$259,995,106,20

	259,995,100.20
ASSETS.	\$ c.
Cash	
000	
Bullion in hand and in transit	
Indian Government rupee paper. Consols Colonial and other secur-	
ities	6,713,396.96
Sterling reserve fund investments	,
£570.000 21/2 per cent Consols	
at 85 £484,50	0
(of which £250,000	
lodged with the Bank of England as	
a special London re-	
serve.)	
£255,000 234 per cent.	
national war loan, at	
£325,000 other sterling	
securities, written	
down to 286,000	

£1,000,000 10,000,000.00 Bills discounted, loans and credits 87,146,299.84 Bills receivable...... 99,852,943.49 Bank premises..... 1,397,783.77

\$259,995,106.20

CENEDAL DEOEIT AND LOSS ACCOUNT

GENERAL PROFIT AND LOSS	ACCOUNT.
Dr. 30th June, 1904. To amounts written off:—	\$ c.
Remuneration to directors To dividend account:— £1 10s. per share on 80,000 shares	15,000 00
=£120,000 at 4s. 6d	533,333-33
9¾ 5-8ths, the rate of the day. To transfer to silver reserve fund. To transfer to bank premises ac-	779,487.17
Count To balance forward to next half-	200,000.00
year	1,492,554.31
	\$3,520,374.81
Cr.	\$ c.
By balance of un- divided profits, 31st December, 1903 \$1,417,366.08	
By amount of net profits for the six months end- ing 30th June, 1904, after mak-	
for bad and doubtful debts, deducting all	
expenses and interest paid and due 2,103,008.73	
	\$3,520,374.81

\$3,520,374.01

STERLING RESERVE FUND.

To balance......\$10,000,000.00 By balance, 31st December, 1903 ... 10,000,000.00

SILVER RESERVE FUND.

To balance..... \$7,000,000.00 By balance, 31st December, 1903... 6,500,000.00 By transfer from profit and loss account.....

500,000.00

\$ 7,000,000,00

HONGKONG AND WHAMPOA DOCK COMPANY, LIMITED

The report of the Board of Directors for presentation to the ordinary half-yearly meeting of shareholders, on Monday, the 22nd instant, reads as follows:

Gentlemen,-The directors have now to submit to you their report, with a statement of accounts for the half-year ended 30th June, 1904. The net profit for the six months, after paying interest due and all charges, amounts to \$539,446.98, to which has to be added the balance brought forward from last account, \$125,340.69, making a total of \$964.787.67. From this have to be deducted-Directors' fees, \$10,000.00, and auditors' fees, \$750.00; total, \$10,750.00, leaving available for appropriation, \$954,037.67.

The directors recommend that a dividend for the half-year of 12 per cent, or \$300,000, and a bonus of 4 per cent, or \$100,000, in all \$400,000, be paid to the shareholders; that \$35,937.85 be written from the value of Kowloon Docks, \$1,890.09 from the Cosmopolitan Dock, \$10,738 from the Floating Plant, and the balance, \$505,-471.73, be carried to the new account. The Electric Power Plant has been successfully installed throughout the engine works. The lighting of No. 1 Dock is completed, and further extensions are in progress. The refit of H. M. S. Glory was duly completed by the arranged date to the satisfaction of the naval authorities. The dredger Canton River has been satisfactorily employed during the greater part of the period under review. There is a considerable falling off in tonnage for docking during the past three months.

C. P. CHATER, Chairman.

Hongkong, 8th August, 1904.

The accounts are as follows: CAPITAL ACCOUNT.

30th June, 1904. ASSETS. Aberdeen.

To value of Aberdeen Docks, as per last statement...... 100,000.00

Kowloon. To value of Kowloon Docks, as per last statement..... 2,142,539.35 Less amount since written off..... 42,509.35

\$2,100,000.00 To amount paid in connection with extension of Hunghom inland lot No. 24, and purchase of Hunghom inland lots Nos. 15, 21[23, and 17,709.00 64 To amount paid on account of new fitting and brass 26,160.00 shops..... To amount paid on account of removing hill at back of new forge..... 2,200,00 To amount paid on account of new

electric installa-12,482.00 tion..... To amount paid on account of moulding shop exten-3,125.00 S1011..... To amount paid on

account of shipyard machine shed 17,824.00 extension.....

To amount paid on		
galvanizing shop.	1,829.00	
To amount paid on account of new		
power house	22,187.00	
To amount paid on account of two		
To cost of hydraulic	820,00	
keel plate flanging machine and oth-		
er machinery for		
ship-yard and boil- er shop	40,328.00	
To cost of electrical material, Green's		
economizer,		
new power house	22,549.85	
To cost of new ma- chine tools for		
new fitting shop To cost of new ma-	7,410.00	
chine tools for	0 557 00	
To cost of 6-inch	9,551.00	
centrifugal pump- ing engine, sal-		
vage gear	1,756.00	2,285,937.85
Cosmopolitan. To value of Cosmo-		-1-031931.03
politan dock, as		
To amount paid for	300,000.00	
erecting new paint	689.00	
To cost of new wind-		
same in place	1,201.09	
To value of tug,		301,890.09
dredgers, launch- es and lighters		410,738.00
To sundry debtors.		328,625.95
To value of material on hand		1,848,101.70
	5	5,275,293.59
30th June, 1904. LIA By shareholders for 50	BILITIES.	\$ c.
of \$50 each, fully p	aid up	
By admiralty loan Less repayments		
£5,3	05 0 7 at 1-7 1	-16
By marine insurance a	ccount	- 66,791.18
By sundry creditors By balance of profit		
brought forward		
	425,340.69 539,446.98	
		964,787.67
		5,275,293.59
REVENUE 30th June, 1904.	ACCOUNT,	\$ C
To interest		45.491.69
To Crown rent To fire insurance		
To office expenses, sala ery, and rent of head		
To drawing office expe	nses and sal-	13,473.12
To telegrams		2,103.86
To legal expenses	ccount	8,000.00
To subscription to Ru war fund		1,000.00
To profit		530,446.98
		\$654,551.12
Ist Jan. to 30th June, 19 By net earnings of the		\$ c.
three establishments	, and profit	
on sale of Fame By towage, net earning	S	623,845.52 782.10
By dredger, net earning By bonus on insurance		301.23
		\$654,551.12
		40041001.12

THE DAI-ICHI GINKO, LTD.

The sixteenth half-yearly report of the Board of Directors of the Dai-Ichi Ginko, Ltd. (formerly the First National Bank), for the half-year ended 30th June, has just been issued to the shareholders. The paid-up capital of the Bank is five million yen and the reserve fund amounts to a million and a half. The gross profit for the half-year amounted to Y1,115,897.67, from which falls to be deducted Y707,861 for general expenses, leaving a net profit of Y408,036.67. Adding to this the balance of Y141,719.01 brought forward from last year, there is a sum of Y549,755.68 available, which the directors propose to deal with as follows:-To Directors' and Auditors' remuneration and officers' pension fund, Y12,240; to addition to Reserve Fund, Y150,000; to dividend on 100,000 shares at Y2.25 per share, at the rate of 9 per cent per annum, Y225,000; altogether Y387,240, leaving Y162,515.68 to be carried over to next halfyear.

Looking at the liabilities, it is seen that the Bank has Y1,785,052.60 circulated in notes in Korea. The current accounts amount to Y16,874,628.51; the deposit receipts, Y9,054,165.06; the deposit accounts, Y6,515,419.12; other accounts, Y2,270,281.65, and due to correspondents, Y1,498,976.11. The assets include cash in hand, Y6,215,645.99; money at call and short notice, Y2,563,528.70; bullion, Y98,303.92; Government and municipal bonds, debentures and shares, Y4,360,035.82; bills discounted, Y23,057,578.32; loans and advances, Y6,780,128.42, and due by correspondents, Y877,699.69. The Bank's premises and furniture are valued at Y956,357.87.-/apan Herald.

YOKOHAMA ENGINE & IRON WORKS, LTD.

The report presented to the shareholders at the seventeenth yearly general meeting held at the Company's Office, No. 161 Yamashita-cho, Yokohama, on July 29, was as follows:—

Statement of Accounts for the year ending 31st May last: The Net Profits for that period (including the sum of Y9,247.55, brought forward from 31st May, 1903) after payment of an Interim Dividend of Y13,000 in January last and providing for Depreciation of Buildings, Plant and Machinery, and payment of Directors' and Auditors' Fees, etc., amount to Y20,114.55.

In payment of a Final Dividend for the Year of Y2.50 per Share...... 6,500.00 The Balance to be Carried Forward. 13,614.55

20,114.55

NORTH BORNEO TRADING CO., LTD.

The seventh ordinary general meeting was held last month at London. Mr. A. J. Scrutton, who presided, moved the adoption of the report. He stated that the company were still making satisfactory progress, although not to so great an extent as in the previous year. A considerable rise had taken place in the value of the rubber trees which the company had planted. These had increased in number and utility, and the company were certainly doing well in that respect. The timber sales had shown a considerable advance, and prices had increased. Now that matters in China were settling down, the company were doing better business. The latest accounts which had been received from Borneo showed that the company's land and timber were going up in value. Mr. C. P. Bennett, who seconded the motion, dealt in detail with various small changes which had taken place in the items of the accounts during the year. He stated that the cash in London was £2,600 more than it was last year, because since then a call had been received. The cash in Borneo was £1,525 less because of the extra stock carried forward there. The trading account showed an increase in gross profit of about £350. He then proceeded to read a number of long letters from the manager in Borneo. In the course of these Mr. Altman stated that he had every confidence that the demands of the Chinese markets would

be good and far in excess of the company's output, even if it were quadrupled. The shipments of timber from Borneo during the first four months of 1903 amounted to 63,485 cubic feet, and for the corresponding period of this year to 123,019 cubic feet. During the first quarter of the current year 118,182 cubic feet of timber were sold—an amount practically equal to the total quantity shipped for that period. He had systematically prospected and had proved the value both of the leased and the freehold land. Mr. Spurling, in the course of a short discussion, pointed out that the original Borneo company took a considerable time to turn the corner. The motion was adopted.

NETHERLANDS TRADING CO.

The Netherlands Trading Company at Batavia, working with a capital of fl.12,000,000 and fl. 28, 239, 947 in deposit and current accounts, has made a profit of fl.1,801,139, to which sundry items and payments of writtenoff debts are to be added, making together fl.2,822,563. From this amount there are to be deducted: Expenditure, fl.1,156,311; stock account, fl.61,278; agricultural undertakings, fl.197,653; so that the net profit remains fl.1,407,137. Moreover, the head office made a profit of fl.2,176,393 on interest, and fl.753,578 on commission; total, with some other items and the profit of the factory mentioned above, fl.4,401,655. Against which there are losses: On shares and bonds of agricultural companies, fl.569,406; doubtful debtors, fl.191,017; sundry charges, fl.371,540; and the net profit is thus fl. 3,201,767. The reserve fund amounts to fl.5,000,000 at present, and the pension fund to fl.950,000.

NETHERLANDS INDIA PETROLEUM CO.

The Royal Company for Working Petroleum Sources in Netherlands India has issued its annual report. The production of refined petroleum was 5,328,423 units; of benzine, 76,846 tons, of which 76,846 tons were used for export and 18,364 as burning material. A part of the benzine was worked in the refineries at Rotterdam and Dusseldorf for sundry produce required for consumption, and another part sold in raw condition to England, Germany, and Belgium. On the several concessions the exploration and working was continued with favorable or less favorable results, but in general the prospects are encouraging. The company had ordered three new tank steamers at a value of fl.1,000,000 together, which steamers will be constructed on Netherlands wharves. The sale was transferred to the Asiatic Petroleum Company (Ltd.), in which the Royal Company is concerned for a third share, while also the other Indian petroleum companies are included in this ring-together five companies.

DEUTSCH ASIATISCHE BANK

The head office of the Deutsch Asiatische Bank reports that its business in 1903 has not at all suffered by the war in East Asia. In spite of the heavy fluctuations of the silver value, the bank has made good profits out of exchange business. The branches at Tientsin, Hongkong, and Calcutta were able to work more favorably, while the results of the Tsingtau branch are not so good. The Shantung railroad was opened on June I, 1903, from Tsinanfu-West. The Shantung Coal Company has enlarged its output to three hundred and twenty tons of coal per day from the Yangtse Colliery. In the Weihsien district a new colliery has been opened. The goods traffic, in spite of the war, has developed in 1904. The gross profit in 1903 amounts to m. 1,056,545 (m. 1,002,630 in 1902), and after paying all expenses a net profit remains of m.718,687 (m.688,097), out of which m.63,338 (m.62,742) are applied to reserve purposes, while m. 26,087 (m. 24,426) are paid as directors' fees. The shareholders are receiving m.500,000 as a dividend of 10 per cent, against 9 per cent for the previous year.

Dutch Gutta-Percha Co .- At the annual meeting of the shareholders of the Nederlandsche Gutta-Percha Maatschappy (Dutch Gutta-percha Co.), held at The Hague, on May 7th, the report of the board of directors for the calendar year 1903 was presented, from which the details which follow are derived. Many improvements had been made during the year in the factory of the company at Singapore, for the extraction of Gutta-percha from leaves, by the Ledeboer process. The working capacity had been almost doubled, now being equal to handling more than 100 piculs [I picul=1331/3 pounds] of leaves in 12 hours. The capacity is to be still further increased by the addition of the machinery acquired from the Dutch India Gutta-percha Co., in liquidation, and formerly used by them on Boeroc island. During the year the Singapore factory was idle 59 days. During the early part of the year there was difficulty in obtaining leaves, due to prohibitory taxes and other restrictions on collecting leaves in Malacca and Sarawak, whence large quantities had been received previously. Representatives of the company went through Dutch Borneo and Sumatra, making contracts for leaves with the native chiefs and other landowners, and also with the Sultan of the Rhio-Lingga archipelago. Rules and regulations for the collection of leaves have been established and premiums offered for the planting of Guttapercha species. Reports have been received that plantations have already been started. The results from the new arrangements for securing leaves were visible only during the latter half of 1903. The Gutta-percha product has been improved, the yield varying from 1.05 per cent to 3.5 per cent by weight, according to the source of the leaves. The Gutta-percha produced during the year was worth 215,000 guilders. The company's machinery for cleaning raw Gutta-percha was little used during the year, owing to the depreciation in the Guttapercha market, but it is intended to resume this branch of the company's work.

The company own two small steamers, for the transporting of leaves—one in service in the Rhio-Lingga archipelago and the other in the Barito river district, in Borneo. In the other districts service is by means of chartered

steamers.

The company have continued the planting of Gutta-percha in the province of Preanger, in Java. In December about 60,000 young shoots were planted. Mention is made of an intended planting of about 88 acres this year, and the purchase of considerable additional land. The plantations are reported in good condition, though better results have been obtained from seedlings than shoots or stumps. There are now planted about 245 acres.

The financial report showed a profit for 1903 of 38,746 guilders. But there was a deficit at the beginning of the year of 107,779 guilders, which is thus reduced to 69,033 guilders, and it is hoped that the deficit will be wiped out during the present year. Reports from Singapore indicated a profit of about 90,000 guilders

since January I.

The directors were authorized to issue the treasury stock when this should appear desirable, though it was stated that no present

necessity exists.

THE GRAND HOTEL, LIMITED, YOKOHAMA .-Report of the Directors submitted at the Thirtieth Semi-Annual Ordinary General Meeting of Shareholders, held at the Grand Hotel, Yokohama, on Wednesday, the 27th day of July, 1904:

The Profit and Loss Account, and Statement of Assets and Liabilities, for the half year ended June 30th, 1904, accompany the Report.

The net profit for the half year, including balance brought forward from December 31st, 1903, and after providing for general expenses, Directors' and Auditor's fees, bonus to Manager, and Sundry Creditors, and after writing off bad or doubtful

To this is added by Transfer from

11.995.68

Suspense account..... Which it is proposed to apply as follows:

In payment of a dividend of Y.8.00 per share for the half year.... 20,000 00 For Depreciation..... 3,614.19

The annual report of the Netherlands Indies Bank shows fl.361,551 to net profit. It is proposed to pay a 5 per cent dividend and carry fl.1,551 forward. The Bank has fl 8,800,000 in the N. I. Landbouw Maats.

NORTH BORNEO COMPANY

The report of the British North Borneo Company to Dec. 31st last states that the total receipts for the year on Revenue account amounted to £83,657, comprising £81,190 in Borneo, and £2,466 in London. The expenditure for the year amounted to £54,639 on revenue account in Borneo, and £4,644 for home expenses. These figures show that the receipts of the year exceeded the expenditure by £24,373; but, on the other hand, an amount of £2,705 has to be taken into account for depreciation, adjustment of exchange, etc. There has been a net expenditure on capital account in 1903 of £92,743, including a sum of £8,437, being proportion of salaries, subsidy to steamers, and other expenses estimated as chargeable to capital. The special expenditure in 1903, namely, £17,244, has also been carried to lands and property account. Revenue account for the year shows a credit balance of £21,667. This sum has been added to the balance of land sales and revenue account, brought from last balancesheet, and, after deducting interest on debentures and bonds, the dividend for 1902 (declared in July, 1903), etc., there remains a credit balance of £68,380. The proceeds of sales of land in 1903, amounting to £1,052, have been carried to the debenture redemption fund. The Court recommends the payment of a dividend at the rate of 2 per cent per annum, which will amount to £15,059.

KOREAN BANK .- A scheme has been set on foot by the Korean Government to establish a great bank at Seoul. They have decided to borrow the capital-Yen 10,000,000, with interest at the rate of 5 per cent per annum-from a wealthy Japanese who is now in the capital. The gold mine belonging to the Imperial Household and some national taxes in connection with woods and fields are said to have been mortgaged as security. The loan is repayable at the end of thirty years.

The Chartered Bank of India, Australia and China has opened a branch at Saigon. Mr. T. Bumpus, late of the Manila branch, is Agent in charge.

Mr. J. L. Lyon succeeds Mr. J. K. Muir as manager of the Singapore agency of the International Banking Corporation.

THE UNITED ASBESTOS ORIENTAL AGENCY, LTD.

Statement of accounts for the year ended

31st May, 1904:

The Balance at the credit of profit and loss account, after writing off \$429.33 for depreciation and bad debts and including \$119.44 brought forward from last year, is \$20,360.23, which it is proposed to appropriate as follows: -To place reserve fund, \$6,000.00; to pay a dividend of 15 per cent. on ordinary shares, \$5,940,00; to general manager's remuneration, \$2,000.00; to pay a further dividend of 71/2 per cent on ordinary shares, \$2,970.00; to pay \$29.70 per share on 100 founders' shares, \$2,970.00; to carry forward to new account, \$480.23; total, \$20,360.23.

PUNJOM MINING CO., LTD.

A meeting of shareholders of the Punjom Mining Company was held recently to confirm the resolution that the company be wound up. The resolution was carried unanimously.

HONGKONG, CANTON AND MACAO STEAM-BOAT CO., LTD.

Report of the board of directors to the ordinary half-yearly meeting of shareholders, held at the office of the Company on August 16th:

The directors beg to submit to the shareholders the report and statement of accounts for the half-year ending 30th June last. After paying running expenses, salaries, premia of insurance, repairs and all other out-goings, there remains, including \$41,531.86 brought forward from last account, and \$33,000 transferred from the depreciation fund to partially meet the cost of repairs incurred during the half-year, the sum of \$136,-362.85 at credit of profit and loss account. From this amount the directors recommend that a dividend for the half-year of 10 per cent on capital, or \$120,000, be paid to shareholders, leaving a balance of \$16,362.85 to be carried forward to new account. Dullness of trade and increased competition, necessitating still further cutting of rates since the date of last report, account for the poor result of the steamers' working during the period under review. The direct West River service from Hongkong, which had been suspended since the year 1900. was resumed in April last. The usual overhaul and repairs have been effected during the halfyear and the steamers are all in good running order. An electric light installation has been furnished to the Honam at a cost of \$8,028.64. The Company has recently acquired, jointly with the China Navigation Company, another valuable riverside property at Canton, the cost of which is included in the accounts presented.

THE SHANGHAI ELECTRIC AND ASBESTOS CO., LTD.

An 'extraordinary general meeting of the shareholders in the above Company was held at the head office, 4, Peking Road, during the month of July:

To bring before the shareholders resolutions to increase the capital of the Company from

\$100,000 to \$200,000.

The following six resolutions were put to the meeting separately by the chairman, and carried unanimously:-

1.-That the capital of the Company be increased from \$100,000 (Mexican) to \$200,000 (Mexican) by the creation of 4,000 new shares of \$25 each, ranking with the 4,000 like shares already existing.

2.—That of such 4,000 new shares so created, only 1,000 shall for the present be

issued.

3 -Such 1,000 shares shall rank for dividend as and from the first day of July, 1904.

4.—Such 1,000 new shares shall be offered to the shareholders on the register on the 1st day of July, 1904, at the par rate of \$25 (Mex.), a share in the proportion of one new share for every four existing shares held by them, and such offer shall be made by notice to the shareholders to be given not later than the 6th day of August, 1904, specifying the number of the new shares to which the shareholder is entitled, and stating that unless an acceptance of such offer in writing is delivered to the secretary of the Company at Shanghai on or before the 31st day of August, 1904, together with the sum of \$25 (Mex.) for each such new share so accepted, the offer will be deemed to be declined.

5.-Upon acceptance and payment within the time above named, the shares so accepted and paid for shall be allotted accordingly.

6.-After the 31st day of August, 1904, any such shares not then so accepted and paid for, shall be disposed of by the directors either to shareholders or to others as they may deem advisable, at the best price obtainable therefor, not being less than the nominal value thereof, and any premium obtained thereon shall be dealt with by the Board at their discretion.

The next resolution is as follows:

"The remaining 3,000 new shares may be issued and disposed of by the Board from time to time and upon such conditions as the Board in their discretion shall deem advisable; and such new shares shall, in the first place, be offered to the shareholders of the present Company."

At a second extraordinary general meeting, held at the head office on Saturday, the 30th of July, the above resolutions were confirmed

FAR EASTERN STOCKS AND QUOTATIONS

COURTESY OF BENJAMIN, KELLY & POTTS, SHAREBROKERS, HONGKONG-MANILA, 2nd September, 1904.

STOCKS	WHEN ESTAB	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND	WHEN	Approximate Return at Present Quotation*	CLOSING
Banks.											PER CENT	
Hongkong and Shanghai Banking) Corporation	1005	\$10,000,000	80,000	\$125	\$125	\$\$10,000,000 \$\$7,000,000 i \$250,000	\$1,492,554	30-6-04	\(\Lambda 1-10s. \(\text{a} \) exchange is. 9 15-16 \(\text{=\frac{1}{16.41}} \) for first half-year 1904 \(\text{f} \)	22-8-04	61/4	(\$650 London £66)
	1891	0 £500,000 {	(I) 49,925 750	€10	£8	\$175,533 \ \$191,973	\$21,668	31-12-03	\$\$2 (London 3s. 6) for 1903 None		514	\$39 sales \$10
Union Insurance Society of Canton, \ Limited	1867	\$2,500,000	10,000	\$250	\$100	# \$784,445 # \$906,872	\$1,959,926	30-6-03	\$32 for 1902		5 1/2	\$577½ sales
China Traders' Insurance Co., Ld		\$2,000,000	24,000	\$83.33	\$25	\$ \$900,000 \$ \$151,992 \$ \$331,342 \$ \$322,138	Ni1.	30-4-03	\$4 for year ended 30-4-1903	9-12-03	61/4	\$63
North China Insurance Co., Ld	1863	£150,000	10,000	£15	£5	(Tron one)	T271,589	30-6-03	Final of £1 making £2 for 1902	T4-10-02		The Total
Yangtsze Insurance Association, Ld	1862	\$800,000	8,000	\$100	\$60	\$700,000		ł	\$12 for 1902		-	T67½ buyers
Canton Insurance Office, Ld	1881	\$2,500,000	10,000	\$250	\$50	\$1,300,000			\$15 for 1902		9%	\$135
Fire Insurances. Hongkong Fire Insurance Co., Ld	1868	\$2,000,000	8,000	\$250	\$50						7	\$212 buyers
China Fire Insurance Co., Ld	1870	\$2,000,000	20,000	\$100	\$20	\$1,000,000 1			\$22½ for 1902	0 55 21	7	\$325 buyers
Shipping, Tug and Cargo Boats.				#P100	ф20	(f \$2,561)	\$329,047	31-12-03	\$6 dividend and \$1 bonus for 1902	11-3-04	8	\$88 sellers
Hongkong, Canton and Macao Steam-) boat Company, Ld		\$1,200,000	80,000	\$15	\$15	e \$250,000 } d \$600,000 }	\$16,362	30-6-04	\$1½ for first half-year 1904	17-8-04	IO	\$30 sales
ndo-China Steam Navigation Com- (1882	£1,200,000	z 60,000	£10	£10	(i £205,000)	(-0-0					
China and Manila Steamship Co., Ld				\$50		£ 100,000)			10s. for 1903		5	\$117
Douglas Steamship Co., Ld			20,000	40	\$50	(dre and)			\$5 for 1900		-	\$261/2
	1898	pr,000,000		\$50	\$50	(i \$80,935)		30-6-03	\$3 for year ended 30-6-1903	28-9-03	81/2	\$36½ buyers
Star' Ferry Co., Ld	1900	\$ \$200,000	10,000	\$10	\$10 \$5	\$60,000 } i \$15,093 { \$400,000 }	\$1,287	30-4-04	j Div. \$1 80, bonus 40 cts.) for year end- }	2-6-04	M. Committee of the com	\$40 buyers \$30 buyers
Straits Steamship Co., Ld			(2) 5,000	\$100	\$100) e \$21,075 (\$18,000 (\$33,648	31-12-03	\$5 for 2nd 1/2 year making \$13 for '03	21-4-04	81/2	\$155 sellers
Shell" Transport & Trading Co., Ld		£2,000,000	2,000,000	£I	£1	£400,000	£19,555	31-12-02	Interim of 1s. (Coupon No. 4) for '03	29-1-04	4 1/2	24/ buyers
aku Tug and Lighter Co., Ld	-	T. T1,500,000	30,000	T. T50	T. T50	(Tol non 1			T., 4			T25 buyers
hanghai Tug and Lighter Co., Ld) Do. do. Preference	1903	T1,500,000	100,000	T50	T50				Interim of T2 for 1904			T46 ex div.
Refineries. thina Sugar Refining Company, Ld uzon Sugar Refining Company, Ld erak Sugar Cultivation Co., Ld	T882	\$2,000,000 \$700,000 T350,000	20,000 7,000 7,000	\$100 \$100 T50	\$100 \$100 T50	none	Dr. \$147.717	31-12-03	Technology of the C	20 8 24	434	\$200 ex div.
	1000	F.4,000,000	16,000	F.250	F.250				Final of F.20 for 1903			
aub Australian Gold Mining Co., Ld	1892	€200,000 }	150,000	£I	18/10)			NY			5490 sales
hinese Engin'ring and Mining Co., Ld.	1901	£1,000,000	1,000,000	LI	£I	9 £20,000		28-2-03	No. 2 of Is	28-1-01		16½ buyers 16½ sales

STOCKS	WHEN ESTAB- LISHEI	CAPITAI,	NO. OF SHARES	VALUE	PAID UP	R	ESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND	WHEN	Return at Present Quotation*	CLOSING
Docks, Wharves and Godowns.												PER CENT	
Hongkong & Whampoa Dock Co., Ld	1901	\$2,500,000	50,000	\$50	\$50	i	\$25,500	\$505,471	30-6-04	\$6 div. & \$2 bonus for 1st 1/2 year '04	23-8-04	61/2	\$226 sellers
S. C. Farnham, Boyd & Co., Ld	1901	T5,520,000	55,200	Tioo	T100		T900,000	T48,153	30-4-04	Final of T7 making T12 for year	20-7-04	7	Ti73 sellers
anjong Pagar Dock Co., Ld	1864	\$3,700,000	37,000	\$100	\$100	\$	1,950,000			\$6 for second half year '03	23-3-04	434	\$250
Ciley Hargreaves & Co., Ld	1899	\$875,000	6,000	\$ \$100	\$100		\$150,000	\$40,936	31-12 03	\$ \$10 div. and \$2 1/2 bonus { for '03	7-3-04	614	\$200 sellers \$110
Iowarth Erskine, Ld	1901	\$1,200,000	12,000	\$100	\$100		\$14,000	\$29,926	30-6-03	\$10 div. & \$2½ bonus for '02/3	27-8-03	6	\$210 buyers
Iongkong and Kowloon Wharf and (Godown Co., Ld	1886	\$1,500,000	30,000	\$50	\$50	3 9	\$50,989 (\$28,015	31-12-03	Interim of \$2 1/2 for '04	31-8-04	13/	\$113 ex div.
hanghai and Hongkew Wharf Co	1902	T2,000,000	20,000	T100	T100	5 6	T487,210 (T22.895	31-12-03	Interim of T4 for '04	23-8-04	7	T153 sales
Vangtsze Wharf and Godown Co., Ld	D 1000 1000		2,500	T100	Tioo	(r	150,9131		77	T18 for '03	31-3-04	91/2	Tigo sales
New Amoy Dock Co., Ld			6,000	\$634	\$634			2007		\$1¼ for '03	5-5-04	41/4	\$27 1/2 sellers
Lands, Hotels and Buildings.													
Hongkong Land Investment and Agency Co., Ld.	1889	\$5,000,000	50,000	\$100	\$100	e	\$500,000	\$51,966	31-12-03	Interim of \$6 for '04	27-7-04	8	\$154 sellers
						1	T800,000)						
Shanghai Land Investment Co., Ld	1901	T2,600,000	52,000	T50	T50	1 e	T17,114	T37,634	31-12-03	Interim of T3 for '04	18-7-04	71/4	TIII sellers
ientsin Land Investment Co., Ld	1902	494	7,726	T100	Troo	i		T325	31-12-03	Final of T5 making in all T9 for '03	and the same of th	71/4	T125 sales
China Land and Finance Co., Ld	1903	\$300,000 \$300,000	6,000	T50	T50		none	\$626		Interim of T2\$2.60 for '03	21-1-04	71/2	\$38 buyers
Vei-hai-wei Land and Building Co., Ld.	1899	To1.850	3,764	T25	\$30 T25		none	A CONTRACTOR OF THE PARTY OF TH		None	21-1-04	1/2	T10
Vest Point Building Co., Ld	1889	\$625,000	12,500	\$50	\$50	1	none			Interim of \$1 1/2 for '04	27-7-04	51/4	\$61 sellers
longkong Hotel Co., Ld	1866	\$600,000	12,000	\$50	\$50	3 "	\$100,000 }	\$11,668	30-6-04	\$5 for first half-year for '04	29-8-04	734	\$131 ex div.
stor House Hotel, Ld. (Tientsin)		T. T100,000	2,000	T. T50		(m	\$20,000) T41,000	T655	20-2-04	Final of T4 making T9 for the year	19-4-04	6	T150
stor House Hotel Co., Ld. (Shanghai)	1901	\$750,000	Mark the second	\$25	T. T50 \$25		none	\$9,989	30-6-04	\$2½ for year ending 30-6-04	30-8-04	71/2	\$331/2 ex div.
Iotel des Colonies Co., Ld. (Shanghai) Jueen's Hotel (Wei-hai-wei)	1902	T225,000	9,000	T25	\$25 T25	n	T13,986	T680		To.87 1/2 for the year ending 31-3-04.	28-5-04	7 1/4	T15½ buyers
ientsin Hotel, Ld. (in liq.)		\$12,000	600	T25 \$20	T25 \$20		none	\$4,989		\$5 for the year ending 28-2-03	4-4-03	121/2	\$40
ientsin Hotel des Colonies, Ld	1903	T70,000	1,400	T50	T50		none	Dr. T2,123		Interim of T31/2	23-9-03		T40 sellers
Iumphreys' Estate & Finance Co., Ld.	1887	\$1,500,000	150,000	\$10	\$10	1 6	\$50,000	\$99,177	31-12-03	90 cents for '03	11-2-04	7	\$13 sellers
Cotton Mills.													
Co., Ld	1895	T750,000	15,000	T50	T50		none	T11,655	31-10-03	T4 for year ended 31-10-03	22-12-03	1234	T30
nternational Cotton Manufacturing	1895	T750,000	(4) 10,000	T75	T75	72	T30,098	T88,034	30-9-03	Interim of 3 per cent account 1898 3	0-4-1898	-	T25 buyers
aou-kung-mow Cotton Spinning &)										Interim of 40/0 a/c 1898 on 6,000 shares			T321/2 sellers
Weaving Co., Ld	1895	1800,000	(5) 8,000	T100	T100								
	1895	T1,000,000	2,000	T500	T500	1	T5,658	T26,389	31-12-03	4 º/o for 1897	2-2-1898		T150
Hongkong Cotton Spinning, Weaving) and Dyeing Co., Ld	1901	\$1,250,000	125,000	\$10	\$10		none	\$11,121	31-7-03	Final of 60 cents making \$1 for) the year ending 31-7-03	15-9-03	81/4	\$12 sellers
Cigar and Tobacco Cos.										(Life year charing 32 / 03			Isales
hanghai-Sumatra Tobacco Co., Ld	1902	T600,000	(6) 30,000	T20	T20	5 71	T24,820 } T25,000 \$	T1,091	31-10-03	Interim of T3 per share	31-8-04	91/4	T67 ex div.
Ihambra, Limited	1808	\$60,000	300	\$200	#200	1		\$57	21 12-02	\$125 for year ending 30-6-1900	15-8-01	-	\$150 sellers
hilippine Company, Limited		\$675,000	67,500	\$10	\$200 \$10		-	#3/		First year			\$91/2
Miscellaneous.													
reen Island Cement Co., Ld	1889	\$1,000,000	100,000	\$10	\$10					\$1½ for 1903	7-4-04	5	\$301/4 buyers
hina-Borneo Co., Ld	1903	\$720,000	(7) 60,000	\$12	\$12		none	Nil.	31-12-03	60 cents for 1903	21-3-04	5/2	\$11 buyers
. S. Watson & Co., Ld	1886	\$600,000	60,000	\$10	\$10	i e	\$250,000 }	\$2,883	31-12-03	Final of 50 cents making \$1 for '03	2-6-04	634	\$15 sales
Vatkins, Limited	1899	\$100,000	10,000	\$10	\$10	e	\$4,802	\$1.042	31-12-03	\$1 for 1903	28-3-04		\$9½ buyers
ingapore Dispensary, Ld	1891	\$30,000	600	\$50	\$50		\$19,000	\$800	31-7-03	\$5 for year ended 31.7.02	11-11-03		\$70
hina Provident Loan and Mortgage	1898	\$\$1,000,000	100,000	\$10	\$10		\$55,000	\$1,171	31-12-03	80 cents for 1903	18-1-04	834	\$9¼ sales
CO., Laux						1						6 7	\$15 buyers
longkong Electric Co., Ld	1889	\$600,000	30,000	\$10	\$10	-	none	\$1,747	30-4-04	f \$1 50 cents } for year ending 30-4-04	18-7-04	1 536	\$9 1/2 buyers

STOCKS	WHEN ESTAB LISHE	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE		ORKING	DATE	LAST DIVIDEND	WHEN	proxima teturn at Present uotation*	CLOSING QUOTATIONS
Miscellaneous.—Continued ongkong and China Gas Co., Ld	1864	£70,000	7,000	£10	£10	1 £23,109 11 £3,000	}	£7,625	31-12-03	Final of 6 per cent and bonus of 1	25-5-04	PER CENT	\$160 burgers
hanghai Gas Co., Ld	1903	T533,300	10,666	T50	T50	9 T125,000	{	T7,548	31-12-03	Interim of T31/2 for '04		7 1/2	\$160 buyers
anghai Waterworks Co., Ld	1881	T. T200,000	7,200	T. Troo	T. T100					Interim of 158, for '04 Final of T4 making T8 for '03/4		12	T ₉₇ sales T ₃₉₅ sales
Co., Ld.	1902	T294,100	2,941	T100	T100	none		T413	31-12-03	T2 for half year	20-6-04		T. T140
ane, Crawford & Co., Ld. (Shanghai).	TOOR	\$250,000	(8) 21,000	\$20	\$20	\$186,000		\$13,104	20-2-04	Finalof \$1 1/ making \$2 1/ forthorner	0 = 01		\$30 sales
kong Rope Manufacturing Co., Ld co. Fenwick & Co., Ld ongkong Ice Company, Ld raits Ice Company, Ld	1883	\$500,000 \$150,000	2,500 10,000 6,000 5,000	\$100 \$50 \$25 \$25	\$100 \$50 \$25 \$25	\$50,000 \$70,000 \$35,000		\$8,395 \$10,517	31-12-03 31-12-03	Final of \$7 making \$12 for the year \$10 for 1903 \$3.75 for 1903 Interim of \$4 for 1904	8-2-04 11-2-04	11½ 9¾ 7¼ 7¾	\$130 buyers \$140 \$48 sellers
ongkong High-Level Tramways)		\$125,000	1,250	\$100	\$100	\$30,000			de-man	\$7½ for second half year '03 \$20 for year ending 30-11-03	2-04	9	\$230 buyers \$165 sales
airy Farm Company, Ld	+896	\$12,000	I,200	\$71/2	\$6 \$10	\$20,000		\$3,029	31-7-03	\$1 1/4 for year ending 31-7-03 \$3 for 1903	20-11-03	61/2	\$280 buyers \$20 buyers
Do. do. (Founders') } brau Planting Co., Lt	1896	\$100,000	\$,604 \$ 9,900 }	\$10 \$10	\$4 \$10	\$20,000	*******	23 101	31-12-03	6d. per share for '03	21-7-04	51/4	\$37 buyers \$5 \$9½ buyers
ina Light and Power Co., Ld	1900	eff was not assume	7,500 30,000	\$5 \$10 \$10	\$5 \$10 \$10	none	Dr.	\$24,551	30-4 04	Interim of 70 cents	10-4-04	8	\$180 buyers \$1 buyers \$19 buyers
illiam Powell, Ld	- 9	\$120,000	12,000	\$10	\$10	none		\$4,757	30-6-03	None Interim of 50 cents for 1903-4	22-3-04	934	\$9¼ buyers \$12 buyers
eam Laundry Co., Ld	1902	\$75,000	5,000	\$5 \$5	\$5 \$3	none		\$3,644	31-5-04	60 cents for year ended 31-5-04 First year	2-8-04	834	\$7 \$3½ buyers
Landbouwexploitatie in Langkat (anghai Horse Bazaar Co., Ld	1902	G.2,500,000	25,000	G.100	G.100	T334,669	\$ 1			1st & 2d quarterly dividends of Tro	(15-0-04	13	T3121/2 buyer
anghai Pulp and Paper Co., Ld	1904	T270,000 T450,000	5,400 4,500	T50 T100	T100	T45,000 T10,000		T3,288	31-12-03 31-12-03	T5 for 1903	8-4 04	C .	T85 buyers T154 sales
Do. (Founders')		\$91,845	6,000	\$15	\$12	\$20,000		\$1,253		1 7 1 1 0 2	20-7-04	5507 35	\$23 sellers
Do. (New Issue)	1902	\$360,000 T350,000 T200,000	24,000 7,000 4,000	\$15 T50 T50 \$100	\$7½ T50 T50 \$100	none T25,000	Dr. Ti	rst 152,318 T1,942	31-12-03	Preferential of 7% for '04	20-7-04 2-5-03 23-3-04	6½·	\$8 sales T40 sellers T65 sales
aits Trading Co., Ld	1887		250,000	\$10	\$10	\$650,000		10	Andrews,	\$13 for 1903	3-04	934	\$135 buyers
ynard & Co., Ld	TOOT	\$225,000	4,500	\$50 \$10	\$50 \$10	\$169,116 none	********	\$2,706	31-12-03	for half year ended 30-9-03 \$5 dividend and \$2½ bonus for '03 \$2 for year ended 31-10-03	26-2-04	1	\$37 sellers \$102 buyers
Cleaning Co., Ld.	1903	\$60,000	1,200	\$50	\$50		-	_		First year		7 %	\$26 sales \$50
ath China Morning Post, Ld	1903	\$150,000	6,000	\$25	\$25		Dr. \$	39,020		None			\$25
LOANS AND DE	BENTU	RES			ENTS FOR	AMOUNT OF LOAN	PAR	OUT- STAND'C BONDS		WHEN PAVABLE.		CLOSIN	G QUOTATION
nese Government, 7 per cent. Silver I igkong & Kowloon Wharf & Godown igkong Hotel Co., Ld., 6% Mortgage	(0)	d Elay/ Deb	antitree of T	2014	S.Bk.Cor Do. Do.	T767,200 \$500,000 \$500,000	T250 \$500	2073 all	Mar. 3 Half y	early on March 31st and September 3 early, June 30th and December 31st	31st, 1917. oth	par. P	

d Depreciation and Insurance Fund.
e Equalization of Dividend Fund.
f Exchange and Investment Fluctuation Account.
g Gold Reserve Fund.

h Exchange Reserve Account.
i Insurance Fund.

Reinsurance Fund.

& Contingencies Account

n Sinking Fund.

n Authorized capital £1,000,000.

n Authorized capital \$2,000,000.

n Depreciation and Repair Fund.

r Repairs and Renewals Account.

s Silver Reserve Fund.

u Underwriting Suspense Account.

v Special Works Fund.

z First issue of 60,000 of which 10,411 unallotted.
1 9,472 shares forfeited.
2 785 shares unissued.

3 7,600 shares unissued. 1,616 shares unallotted.

842 shares unallotted. 6 Only 13,000 shares issued. 7 14,000 shares unissued.

* Based on last year's dividend.

† In exchange for the debentures of 1891.

½ In sums of \$5000, \$1000, \$500 and \$250.

¶ Redeemable in 10 years, or at option of Company, the Company giving 6 months' notice.

† 420 held by the Company.

Dr. Deficit.

SINGAPORE SHARE QUOTATIONS.

NAME	DATE OF FOR-	CAPITAL	CAPITAL,	NO.	ISSUE		RESERVE	LAST DIVIDEND	SINCE LA	ST MAIL	CLOSING QUOTATIONS
	MATION		PAID UP	OF SHARES	VALUE	UP			HIGHEST	LOWEST	2001111
Mining.									4	4	42
Bersawah Gold Mining Co., Ld)			(13,500 I	10	7.50	* / * * * * * * * * * * * *		Ф	40	14 sellers
" Deferred.	1900	\$175,000	115,000	4,000	IO	10				******	8 buyers
Bruseh Hydraulic Tin Mining Co., Ld	1901	600,000	600,000	60,000	10	10				********	4 sales
(adana Gold Mining Co., Ld)			(20,000	10	10		****************		********	to nominal
" " Pref	1901	300,000	220,000	10,000	10	6				*******	6 11
Cechau Goldfields, Ld. Fully paid				6,207	1	1		*******************************		1	10 "
" Contrib	1902	£30,000	£ 16,175	10,493 2	I	19/~		***************************************	A TOUR OF TOUR IN		9.50 sellers
ahang Corporation Ld	1889	€ 250,000	244,306	244,306	I	ī	20,000	3 per cent for year ending 30 6-02	The part of the pa	*******	5 sellers
ahang Kabang Ld)		~	1	360,000	1	19/6			0.00	0.80	o.8o sellers
" Pref	1890	375,000	366,000	15,000	I	1		*****************		*******	nom.
ueensland Raub G. M. Co., Ld. Fully paid		6-16-	556	36,700	1	I			1 232000	********	nom.
" Contrib \	1901	£ 146,700	100,866	110,000	1	11/8	*********	********************	V-0-1-1-0-1-1-1	211111111	0.30 sellers
aub Aust. Gold Ming. Co., Ld. Fully paid)	*0			50,000	I	ī	4,873	Is. paid January, 'or	1.000 to the late of the late	*****	6.50 sellers
" Contrib \	1892	200,000	191,250	150,000	I	18/10	********	IS. "" " " " " " " " " " " " " " " " " "	*******		6.25 sellers
edjang Lebong Mining Co	1898	f.2,000,000	1,800,000	20,000 3	100	100	********	20 per cent for year ending 31-12-03.		*******	192.50
oyal Johore Tin Mining Co., Ld	1900	\$220,000	220,000	22,000	10	IO		5 " for year ending 15-2-04		4.50	4.50 sellers
ipiau Tin Co., Ld	1899	230,000	230,000	23,000	10	10	8,000	5 " for 1/2 year ending 30 6-03		3.50	3.50 sellers
outh Raub Gold Ming. Synd. Ld	1898	100 000	100,000	1,000	100	100	*********				10 nom.
he Belat Tin Mining Co., Ld	1903	300,000	300,000	30,000	IO	10					9.50 sellers
ronoh Mines, Ld	1902	€ 160,000	149,185	160,000 5	I	I		1s. paid May, '03		. transfers	19.50
uff Development Co., Ld	1903	1 400,000	£350,000	400,000 6	1	I	*******			· · · · · · · · · · · · · · · · · · ·	II
General.											
raser & Neave, Ld	1898	225,000	225,000	4,5CO	50	50	112,500	10 per cent and 5 per cent bonus for '03			102.50 sales
				410			10,000,000 9) 30s. div. and ros. bonus at 1s. 87/8=			
'kong and Shanghai Banking Corporation	1865	10,000,000	10,000,000	80,000	125	125	6,500,000 250,000 <i>10</i>	\$22.99.4 per share for 1/2 year end-		*******	660
lowarth Erskine, Ld	1901	1,200,000	1,200,000	12,000	100	100	140,000	10 & 21/2 p. ct. bon. for yr. end 30-6-03			212.50 buyers
aynard & Co., Ld	1901	34,000		3,400	10	10		20 per cent for year ending 31-10-03.	1	*******	26 sellers
iley, Hargreaves & Co., Ld)		-	(6,000	100	100	150,000	10 p. ct. and 21/2 p. ct. bon. for year '03			
" 7º/o Pref	1899	875,000	875,000	2,750	100	100		7 p. ct. for year 1903	1		112 buyers
ingapore Cold Storage Co., Ld. Fully paid				1,000	10	10		, p j	******	*******	10 nominal
" Contrib S	1903	600,000	130,000	24,000 4	10	5	********				5.10
ingapore Dispensary Ld	1891	30,000	30,000	600	50	50	19,000	10 per cent for year ending 31-7-03	The state of the s	*******	70 sellers
traits Ice Co., Ld	1884	200,000	200,000	2,000	100	100	45,000	71/2 " for 1/2 year ending 31-12-03		*******	rea callors
traits Steam Ship Co., Ld		500,000	421,500	5,000 7	100	100 {	400,000	5 per cent for 1/2 year ending 31-12-03		********	145 sellers
traits Trading Co., Ld	1887	3,000,000	2,500,000	300,000 8	IO	10	700,000	10p.ct.& 25cts.bon. 1/2 yr.end 31-3.04	36.75	36.50	36.75 sellers
anjong Pagar Dock Co., Ld		3,700,000	3,700,000	37,000	100	100	1,021,395 12	\$6 for half year ending 31-12-03		420	247.50 sales
Debentures. \$											
owarth Erskine Ld. 7 per cent 250,000	*******	******	*********	******							3 per cent prem.
ngapore Municipal 6 " 400,000	*******	*********	**********		*******					*******	" nominal
51,878,000		*******	*********	******		*****	*******		*******	*******	i prem. bnye
4 055,500	*******	*********	*********				*******		******		2 '' dis. nomin
iley, Hargreaves & Co., Ld. 6 p. cent 225,000	*******	*******	*********		******		********	*******************************	*******		piem. buy
anjong Pagar Dock Co., Ld. 6 " 250,000	*******		******				,	***************************************	********	*******	2 " prem. buye
5 1,365,500		**********	*********	*********			**********		*******	*******	par buyers

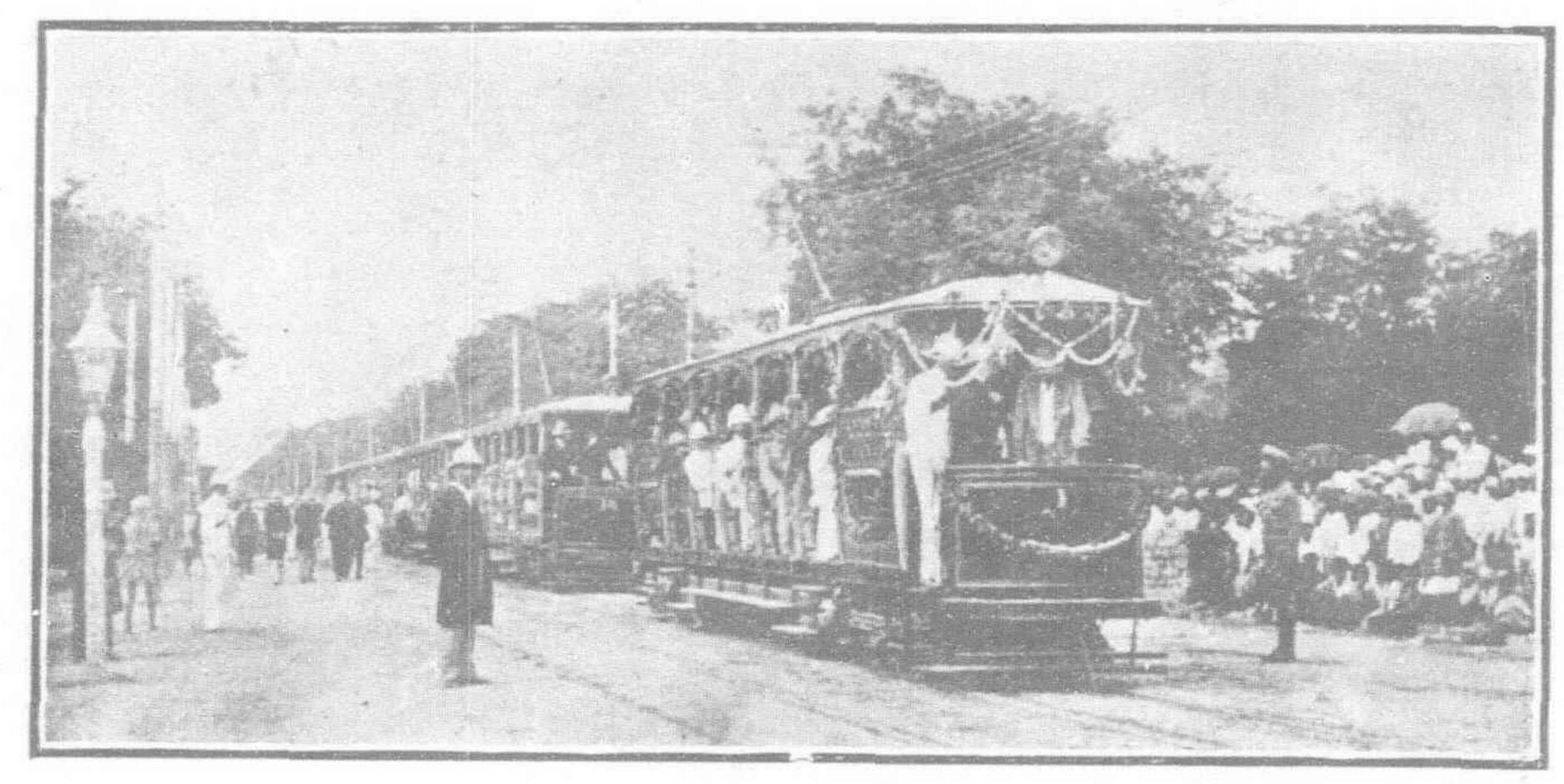
^{1 3,500} unissued. 2 13,300 " 3 2,000

^{4 35,000} unissued. 5 10,815 " 6 50,000 "

^{7 785} unissued. 8 50,000 ". 9 Special Gold Reserve Fund.

Singapore, 1st September, 1904.

¹⁰ Insurance Fund.
11 Sundry Reserves.
12 Sundry Reserves.



MANDALAY TRAMWAYS. SIR HUGH BARNES STARTING THE FIRST CAR. (REPRODUCED FROM "The Empress," CALCUTTA.)

THE MANDALAY ELECTRIC TRAMWAYS.

The opening of the Mandalay Electric Tramways took place on the morning of 2nd of July, ulto., with considerable éclat. The Lieutenant Governor, Sir Hugh Barnes, opened the road to traffic and started the first car. A short description of the enterprise was incorporated in the speech of Mr. R. L. Griffin, manager of the road, during the ceremonies preliminary to starting the wheels a-rolling. The Mandalay Electric Co. was floated in London in October, 1902, with a capital of £200,000. Work was commenced in December of the same year, and a year and a half later the first car was moved by electric power on the 17th of June. The entire work was completed by Burmese labor under English supervision.

The center of the system has been placed at the new Zegyo bazaar, a municipal undertaking, which, when finished, will be the largest bazaar in the East, and the center of trade for the city of Mandalay and the surrounding country. From the Zegyo Bazaar, the tramway radiates in three directions. One goes to the shore, where the Irrawaddy Flotilla Co's steamers embark passengers for river travel. The second line runs to the Arakan Pagoda serving the suburbs which cluster around that famous shrine. The third branches off to the Court House. The total length of the lines is six miles of double track, on the 3 ft. 6 in. gauge. The contractors for the installation of the plant and the construction of the road are the well-known firm of Dick, Kerr & Co. of London and Edinburgh, who are also constructing the tramways in Hongkong and Singapore and recently secured the contract for the construction of the Siamese Tramways. The sub-contractors for the work were Messrs. Nahapiet & Martin of Rangoon, and the consulting engineers to the Tramways company are Kincaid, Waller, Manville and Dawson, of Westminster, who were represented by Mr. E. Sellon.

There are 24 cars seating 48 passengers each. Mr. Thos. Williamson has had charge of the interests of Dick, Kerr & Co. during the work of construction, and was highly complimented by the Governor for the very efficient manner in which he had successfully carried it to a conclusion.

RAILWAY MATERIAL FOR SIAM

OPENING OF TENDERS.

("Bangkok Times.")

The tenders for the railway rolling stock, and spare parts for the same, were opened on the 15th of August at the head office of the Royal Railway Department, by the Director General, Mr. L. Weiler, assisted by Mr. E. Kloke and Mr. E. Theil. Consulates and firms interested were represented at the opening, which was public. There were 37 tenders received, but one was withdrawn. As was stated yesterday, of the 36 tenders remaining, 11 were German, 10 British, 9 Belgian, 2 Austrian, 1 Danish, 1 Italian, 1 Siamese, and 1 Dutch. For rolling stock, the lowest tender was from a Belgian firm, the Compagnie Cen-

trale de Construction, S. A. Belgium (per Messrs. Howarth, Erskine, Ltd.), £39,681. For spare parts the three lowest tenders were all from Belgian firms. We understand that a tender from the Wason Manufacturing Company, of Springfield, Massachusetts, U. S. A., for the entire amount of rolling stock and spare parts, was despatched from London by telegram on Aug. 12th, but did not reach Bangkok until Aug. 15th, at 2 p. m., too late for the official opening of the tenders, and therefore could not take part in the competition. The following are the particulars of the material required:—

ROLLING STOCK.

No.					
I,	I	First	class	saloon	carriage.

2, 7 Composite carriages, 1st and 2nd class.

3, 4 do. do. 2nd and 3rd class.

4, 29 Third class carriages.

5, 7 do. do. do. 6, 11 Guards and luggage vans.

7, 18 Wagons for piece goods.

8, 14 do. do. loads.

9, 6 do. do. do.

10, 7 Cattle wagons and rice wagons.

II, 3 do. do. do. do. do. 12, 40 Open wagons.

13, 10 with platform and roof.

14, 30 do. do. do.

In all, the rolling stock required comprises 48 passenger carriages, 11 guards and luggage vans and 128 goods wagons.

SPARE PARTS.

24 Screw couplings complete, 24 axle boxes draw plate, 12 buffers complete, 36 bearing springs, 24 bars, hooks, 12 tension spiral springs for draw, 12 sets of wheels and axles,

The names of the firms submitting tenders are as follows:—

THE BIRMINGHAM RAILWAY CARRIAGE

		CO	., 411.				
No.	Total &	No.	Total £	No.	To	tal ,	6
I	720	6	5720	II		945	
2	4725	7	3888	12		5980	
3	2468	8	2590	13	+	1615	
4	13775	9	1314	14		5625	
5	3661	IO	1988		-		nen.
		Total.			£ 5.	5,014	
		Spare	parts			656	

THE BRUSH ELECTRICAL ENGINEERING CO., LTD.

On	ly tendered	l for	the 6 first	iten	1S.
No.	Total £	No.	Total £	No.	Total £
I	639	3	2436		
2	4410	4	15863	6	5841
					CONTRACTOR DESCRIPTION

CAMNON, LEGRAND, MONS.

Only Tenders for 12, 13, and 14.

No. Total & No. Total & No. Total & 12 5344 13 1490 14 4740

Total..... £ 11,574 Spare parts not given.

CLUTHA WORKS, GLASGOW.

No.	Total &	No.	Total €	No.	Total £
I	745	6	Sec. 10.10	II	975
2	4669	. 7	3793	12	5800
3	2540	8	2562	1.3	1570
3	13601	9	1251	14	5610
5	3542	10	2082		
		Total			€ 54.791
		Spare	e parts		
The	e above T	ender	is "F. O.	B."	at London

ALEXANDER PENNY & CO., LONDON.

or Liverpool.

No.	Total &	No.	Total £	No.	Total &
I	635	6	5808		607
2	4389	7	3024	12	3840
3	2432	8	1946	13	1100
4	15747	9	966	14	4050
5	3906	10	1260		

BRISTOL WAGON AND CARRIAGE WORKS, LTD.

			,		
No.	Total €	No.	Total £	No.	Total ₹
I	725	6	6820		1012
2	5047	7	4806	12	6360
3	2796	8	3066	13	1870
4	16704	9	1428	14	6030
5	4235	10	2163		

MESSRS. CLARKE & CO., BANGKOK.

No.	Total & No.	Total € No.	Total &
I -	-	6589 11	1079
2 .	5119 7	4576 12	6594
3	2751 8	3104 13	1952
4	15475 9	1497 14	6598
5	4006 10	2334	

GOTHAER WAGGONFABRIK, VORM. FRITZ BOTHMANN & GLUCK A. G.

No.		Total £	No.	Total €	No.	Total £
I		726	6	5500	11	900
2		4480	7	4590	12	6640
3	10	2424	8	3080	13	1830
4		15283	9	1440	14	6150
5		3850	IO	1960		
		To	tal		£	58,853
		Sp	are p	arts		

BRESLAUER ACTIEN GESELLSCHAFT EISENBAHN-WAGENBAU.

No.	Total £	No.	Total &	No.	Total &
I	950	6	7645	II	975
2	5635	7	5670	12	8400
3	3200	8	3990	13	2500
4	21315	9	1830	14	8100
5	5250	IO	2065		
				-	77,525
	Spa	re pa	arts		735.

GESELLSCHAFT HARKORT, DUISBURG.

No. 7 8	Total € 3510 2289	No. 10	Total & No. Notenders 13	Total ₹ 1400 4500
9	To	ta1	5200 parts	£ 17.997

VAN DER ZYPEN & CHARLIER, G. M. B. H., COLN DEUTZ.

On	ly tendere	d No	s. 4, 5, I2,	13, 14	1.
No.	Total &	No.		No.	Total £
5	To	ta1	arts not g	iven.	32,928

WAGGON UND MASCHINEN-FABRIK ACT.	DUTILH-SMITH, MCMILLAN & CO.,	MESSRS. HOWARTH, ERSKINE, FOR
GES., BAUTZEN, VORM, BUSCH.	NEW YORK.	SOCIETE NOUVELLE DES ETABLISSE- MENTS DECAUVILLE A PETIT BOURG.
No. Total & No. Total & No. Total &	No. Total & No. Total & No. Total & S50	No. Total & No. Total & No. Total &
1 689 6 5375 II 1056 2 4377 7 5454 I2 8142	2 4338 7 3450 12 5208	1 948 6 4654 11 1177
3 2112 8 3613 13 2376 4 15979 9 1757 14 7974	3 2358 8 2464 13 1442 4 14077 9 1093 14 4375	2 6314 7 7224 12 9826 3 3440 8 4938 13 2635 4 18531 9 2246 14 8566
5 4096 10 2189	5 3441 10 1903	4 18531 9 2246 14 8566 5 4747 10 2572 ———
Total	Total £ 51,203	Total £ 77,823
	Spare parts 417	Spare parts 497
UNION ACTIEN GESELLSHAFT FUR	A. BERLI & CO., BANGKOK.	MESSRS. HOWARTH, ERSKINE, LTD., FORCOMPAGNIE CENTRALE DE
BERGBAU, EISEN UND STAHL IN- DUSTRIE, DORTMUND.	Only tendered Nos. 12, 13, 14.	CONSTRUCTION S. A. HAMES,
Only tendered Nos. 7 to 14.	No. Total & No. Total & No. Total & 12 7376 13 2127 14 6660	S. PIERRE, BELGIUM.
No. Total & No. Total & No. Total &	Total£ 16,163	No. Total & No. Total & No. Total & 1 528 6 2200 11 483
7 4258 10 1835 13 1688 8 2766 11 875 14 5645	Spare parts 486	2 3087 7 2070 12 5680 3 1556 8 2674 13 1420
9 1360 12 5876	AKYENLSKABET SCANDIA.	4 9570 9 1380 14 3480
Spare parts not given.	Only tendered Nos. 4 and 5.	5 2436 10 1617 ——————————————————————————————————
	No. Total & No. Total &	Spare parts 369
VEREINEGTE MASCHINENFABRIK AUGSBURG UND MASCHINENBAU-	4 16298 5 4074	ACTION GESSELLSCHAFT FUR FABRIK-
GES., NURNBERG, A. G.	USINES DE BRAINE LE COMTE	ATION VON EISENBAUM MATERIAL ZU GARITZ.
WERK, NURNBEG.	Only tendered Nos. 7 to 14.	No. Total & No. Total & No. Total &
No. Total & No. Total & No. Total & 1014	No. Total & No. Total & No. Total &	1 970 6 7810 II 1287 2 6027 7 5166 12 6240
2 4777 7 5364 12 7200	7 3420 10 1463 13 1280	3 3368 8 3360 13 1950
3 2610 8 3661 13 2162 4 17204 9 1719 14 6975	8 2198 11 708 14 4560 9 1110 12 4440	4 21576 9 1596 14 6390 5 5341 10 2821 ———
5 4287 10 2163 ————————————————————————————————————	Total	Total £ 73,902
Spare parts 412	Spare parts 340	Spare parts 443
	LA METALLURGIQUE, SOCIETÉ ANO-	SIAM WAGON CO. (E. BOCK)
GOTTFRIED LINDNER, HALLE A. S.	NYME DE CONSTRUCTION, BRUSSELS.	No. Total & No. Total & No. Total & 1050
No. Total £ No. Total £ No. Total £. 1 543 6 3795 11 747	No. Total & No. Total & No. Total &	2 6020 7 5184 12 6240 3 3360 8 3360 13 2000
2 3101 7 4140 12 5640	1 513 6 4092 II 693 2 3437 7 3330 I2 5084	4 13891 9 1590 14 6300
3 1568 8 2800 13 1650 4 9802 9 1326 14 5430	3 1824 8 2310 13 1481 4 11020 9 1068 14 4719	5 3500 10 2289 ——————————————————————————————————
5 2506 10 1575	5 2716 10 1528	Spare parts 443
10191	PT 1 1	
Total	Total	THE METROPOLITAN AMALGAMATED
Spare parts 337	Spare parts 359	RY., CARRIAGE AND WAGON CO.,
Spare parts 337 ACTIEN GESELLSCHAFT FUR EISEN-		
Spare parts 337	BAUME & MARPENT, S. A. DE CON-	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864
ACTIEN GESELLSCHAFT FUR EISEN- BAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14.	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total ∠ No. Total ∠ 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620
Spare parts 337 ACTIEN GESELLSCHAFT FUR EISEN- BAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14. No. Total & No. Total & No. Total &	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680
Spare parts 337 ACTIEN GESELLSCHAFT FUR EISENBAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14. No. Total & No. Total & No. Total & 7 4936 10 13 2200 8 3388 11 14 7350	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
Spare parts 337 ACTIEN GESELLSCHAFT FUR EISENBAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14. No. Total & No. Total & No. Total & 7 4936 10 13 2200	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
Spare parts 337 ACTIEN GESELLSCHAFT FUR EISENBAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14. No. Total € No. Total € No. Total € 7 4936 10 13 2200 8 3388 11 14 7350 9 1621 12 7800	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
ACTIEN GESELLSCHAFT FUR EISENBAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14. No. Total & No. Total & No. Total & 7 4936 10 13 2200 8 3388 11 14 7350 9 1621 12 7800 Total	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
ACTIEN GESELLSCHAFT FUR EISENBAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14. No. Total & No. Total & No. Total & 2200 8 3388 II 14 7350 9 1621 12 7800 Total	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
ACTIEN GESELLSCHAFT FUR EISENBAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14. No. Total & No. Total & No. Total & 7 4936 10 13 2200 8 3388 11 14 7350 9 1621 12 7800 7000 1621 12 7	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
ACTIEN GESELLSCHAFT FUR EISENBAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14. No. Total & No. Total & No. Total & 7 4936 10 13 2200 8 3388 11 14 7350 9 1621 12 7800 7012 780	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
ACTIEN GESELLSCHAFT FUR EISENBAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14. No. Total & No. Total & No. Total & 7 4936 10 13 2200 8 3388 11 14 7350 9 1621 12 7800 7000 1621 12 7	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
ACTIEN GESELLSCHAFT FUR EISENBAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14. No. Total & No. Total & No. Total & 7 4936 10 13 2200 8 3388 11 14 7350 9 1621 12 7800 7041 AKTIENGESELLSCHAFT FUR FELD UND KLEINBAHN BEDARF VORMALS ORENSTEIN AND KOPPEL, BERLIN. Only tendered Nos. 7, 8, 12. No. Total & No. Total & No. Total & 7 4109 8 2814 12 5503	BAUME & MARPENT, S. A. DE CONSTRUCTION, BRUSSELS. No. Total & No. Total & No. Total & 1 700 6 5720 11 660 2 4256 7 3600 12 4688 3 2240 8 2475 13 1560 4 13920 9 1152 14 4860 5 3472 10 1386 Total	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total Spare parts
Spare parts	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
ACTIEN GESELLSCHAFT FUR EISENBAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14. No. Total & No. Total & No. Total & 7 4936 10 13 2200 8 3388 11 14 7350 9 1621 12 7800 Total & 7800 Only tendered Nos. 7, 8, 12. No. Total & No. Total & No. Total & 7 4109 8 2814 12 5503 B. GRIMM & CO., BANGKOK. No. Total & No. Total & No. Total & 8	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total Spare parts
Spare parts	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
Spare parts	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total £ No. Total £ No. Total £ 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
Spare parts	BAUME & MARPENT, S. A. DE CONSTRUCTION, BRUSSELS. No. Total & No. Total & No. Total & 1 700 6 5720 11 660 2 4256 7 3600 12 4688 3 2240 8 2475 13 1560 4 13920 9 1152 14 4860 5 3472 10 1386 5 50,689 Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
Spare parts	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
Spare parts	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
Spare parts	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
Spare parts	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total Spare parts MESSRS. HURST, NEILSON AND CO., MOTHERWELL. No. Total & No. Total & No. Total & 1 522 6 4584 11 592 2 3304 7 3186 12 4515 3 1932 8 2194 13 1250 4 12122 9 1014 14 3907 5 3006 10 1314 Total Total
Spare parts	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
Spare parts	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total
Spare parts	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total &
ACTIEN GESELLSCHAFT FUR EISENBAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14. No. Total & No. Total & No. Total & 7 4936 10 13 2200 8 3388 11 14 7350 9 1621 12 7800 70tal	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total & 55,018 Spare Parts
ACTIEN GESELLSCHAFT FUR EISENBAHN UND MILITARBEDARF, WEIMAR. Only tendered Nos. 7 to 14. No. Total & No. Total & No. Total & 7 4936 10 13 2200 8 3388 11 14 7350 9 1621 12 7800 70tal	Spare parts	RY., CARRIAGE AND WAGON CO., LTD., BIRMINGHAM. No. Total & No. Total & No. Total & 1 650 6 5885 11 864 2 4550 7 4050 12 5680 3 2480 8 2660 13 1620 4 14674 9 1248 14 5190 5 3612 10 1855 Total

NEW AYALA BRIDGE.

Manila, P. I.—The Municipal Secretary of Manila authorizes the publication of the following advertisement:

"City of Manila, Office of the Municipal Board, Manila, P. I., June 18, 1904. Sealed Proposals will be received at this office until 12 o'clock noon of the first day of December, 1904, for the construction of the superstructure for a bridge over the Pasig river, in the city of Manila, in accordance with the plans on file at the office of the City Engineer.

"Bids will be received: (1st, for the delivery and erection of the structure complete in every respect and ready for use; (2nd) for the delivery at the wharf in Manila, free from all encumbrances, of all the structural material of every sort, ready for the

erection of the bridge complete.

"Each bid shall be accompanied by: (ist) a stress sheet showing the maximum live and dead load stresses in each member, together with the gross and net sections and the material of which each member is to be composed; (2nd) a certified check payable to the city of Manila in the sum of five thousand dollars (\$5,000) United States currency, as a guaranty that the contractor will within ten (10) days from the awarding of the contract enter into contract with the city of Manila for the faithful performance of all the work above specified.

"A bond of ten per cent (10 per cent) of the accepted bid will be required for the faithful performance and completion of the contract within a period of fifteen months from the date of signing the contract.

"Printed forms for bids, plans, and necessary information may be obtained at the office of the City Engineer, Manila, P. I; Engineering News Publishing Co., 220 Broadway, New York City; and the Bureau of Insular Affairs, Washington, D. C. "The right is reserved by the city of Manila to

reject any or all bids and to waive any defects. "All structural work shall be designed in accordance with Cooper's Specifications for Highway Bridges, Class A 1, Edition of 1901, except as hereinafter noted. Clearances and the general design shown

must be followed: "The trusses, etc., shall have riveted connections

throughout. "All castings shall be steel and no material, less than three-eighths inch thick. The flooring on the roadway will be asphalt laid upon a bed of concrete. The sidewalk shall be of cement laid upon a bed of concrete.

"All freight, customs duties on material, royalties on patent devices, etc., shall be paid by the contractor and the city of Manila fully protected from any liability therefor.

"The city will construct all masoury and foundations, and remove the present bridge.

"The contractor shall furnish the city with tracings of all general and detail plans; and all plans, material and work, of every sort, shall be subject to the inspection and approval of the City Engineer of Manila.

"By direction of the Board:

"JOHN M. TUTHER, "Secretary."

General Supplies, Office of the Insular Purchasing Agent. - Manila, P. I., August 1st, 1904. Notice: - Sealed Proposals, in triplicate, subject to the usual conditions, will be received at this office until 11:00 a.m., September 15th, 1904, when they will be opened in the presence of attending bidders, for furnishing and delivery into our warehouse of a large list of general supplies in hardware, canvas, paints, oils, etc., consisting of 103 items, and all sizes and quantities of each item.

Bond or certified check in the sum of 10 per cent of

bid must accompany same.

Forms and specifications can be had on application to this office, C. P. 153.-E. G. SHIELDS, Insular Purchasing Agent.

The list of articles to be purchased include 430 Boiler tubes; 600 air and gauge cocks; 6 steam indicators, 6 Deering's mowing machines; 24 steam gauges; 40 anvils; 50 crowbars; 748 sledges; 2000 lbs. horseshoe nails; 47 reams emery paper; 47 reams emery cloth; 130 reams sand paper; 40 reams garnet paper; 10,000 sheets corrugated iron roofing; 150 sheets galvanized iron, flat; 2000 lineal feet ridge roll; 5,400 lbs. galvanized iron fence wire; 12,000 feet linen hose; 11 tons standard I beams; 2 tons standard z bars; 9 tons angle bars; 315 bars mild steel, round; 60 steel plates; 70 bars mild steel, square; 300 bars round steel; 1300 bars of best round

Norway iron; 400 bars half round Norway iron; 375 bars flat Norway iron; 350 bars of Norway Or Burden's best iron; 15,000 feet of galvanized iron pipe; 650 extra couplings; 900 assorted pipe fittings; 6000 lbs. of galvanized iron wire; 100 cases of steel cut nails; 300 cases and 200 kegs of assorted wire nails; 500 bales of oakum; 200 ash pars; 5000 lbs. of antifriction metal; 2150 lbs. of blank square nuts assorted sizes; 2000 lbs. of standard nuts threaded; 4200 lbs. assorted lag screws: 1100 lbs. of coach screws; 270 bolts of canvas; 1,000 gals. of crude carbolic acid; 1,000 lbs. of tripoli; 1,200 lbs. of packing; 800 lbs. packing; 6 rolls solid rubber packing; Usudurian and Garlock packing; 500 lbs. Hydraulic leather; 2,250 feet garden hose; 60 sets of Studebaker Dump-cart Harness; 175 kegs of horse and mule shoes; 1200 scrub brushes; 50,000 lbs. of assorted soaps; 1,000 lbs. wire staples; 30 gross of thread; 25,000 lbs. of waste; 1,000 gals. of turpentine: 50,000 lbs. of white lead; 40,000 lbs. of dry red lead; 25,000 lbs. white zinc; 2,000 lbs. whiting; 15,000 lbs. oxide of iron; about 10,000 lbs. of assorted colors in oil; 100 gals. graphite paint; 400 gals. Dixon's graphite paints; 30 crucibles; 216 augers; 24 boxes, awls; 24 boxes scratch awls; 16 doz. sliding bevels; 18 doz. bibbs; 24 doz. bits; 78 doz. assorted bolts; 24 doz. brass bolts; 16,000 tire bolts; 7 doz. braces; brads; butts; cupboard catches; chains; files; gauges; tool handles; handcuffs; hatchets hooks; jack screws, locks; padlocks; nail pullers and hoof nippers; picks; pinchers; stocks and dies; carpenters' planes; screw plates; pliers; rules; saws; screws; oilstones; solder; snips; washers; and saw clamps. For further information and complete specifications apply to the Insular Purchasing Agent, Manila, P. I.

Removal of the artificial obstructions in the Canton River. +On behalf of the Kwangtung Provincial Authorities:-

Offers in connection with the removal of the barriers in the Canton River, as specified hereinunder, are hereby invited by the undersigned.

1.—To remove sunken stones to the following estimated amounts:-

2,500 cubic yards to a maximum depth of 16 feet at Low Water Spring Tides [Custom's Datum]. 3,060 cubic yards to a maximum depth of 12 feet. 1.000 cubic yards to a maximum depth of 8 feet. The removed stone to be the property of the Con-

tractor. It is believed that the stones consist chiefly of granite and that they vary in size up to 5 cubic feet. The offer should be made in respect to granite and to "other stone," and at so much a cubic yard. The stone recovered will be measured in the boats. and the proportion of granite to other stone ascertained by a method to be mutually agreed upon.

The offer should state the minimum number of divers to be employed and the months during which the work will proceed.

2. -To remove piles from the Cambridge [Yu Chu] and Whampoa [Li Tak] Barriers, the piles to be the property of the Contractor.

Offers for the removal of stones and piles, as

above, are required at once. 3. -To remove entirely the wooden Bridge [Sha Lo Muk] Barrier, including all outlying piles which are visible above low water. The whole of the material, consisting of piles, timber, bolts, etc., to be the property of the Contractor. The offer should state a period for the completion of the work.

4.-To remove a portion of the central section of the Iron [Sha Lo Tih] Barrier as follows:-

The 24 single screw piles and connecting girders of its northern end, and the adjoining 4i groups of triple screw piles-these piles to be entirely removed and [with all chains, bolts, girders, plates and other gear belonging to the structure? landed and stowed on the adjacent shore at the Sha Lo Fort Jetty.

The speedy performance of this work is specially desirable, and the period within which the work is undertaken to be completed will be an important factor in accepting an offer.

Offers for the removal of the Iron and Bridge Barriers as above will be received until the 10th September. Prospective tenderers of offers are free to examine the barriers by divers, etc.

undertaken work will be required. Offers in reply to this advertisement, and correspondence on the subject, should be addressed to the Barrier Office, Custom House, Carton,

A satisfactory bond for the due performance of

The right of accepting or rejecting any offer made hereunder is hereby expressly reserved.

R. DE LUCA, Acting Commissioner of Customs. Custom House. Canton, 17th August, 1904.

Federated Malay States Railway Tug Boat .- Tenders are invited for a composite tug boat and passenger steamer similar in design to the F. M. S. Railway ferry steamers.

Dimensions about: 96' (" Length over all B. P. 85/ 07/ Beam 18' 5" Depth 8' 6"

C. S. C. Engines (Twin Screws) capable of driving the vessel at 12 knots on trial or a continuous speed of 11 knots per hour without forcing for a prolonged period.

Vessel to be fitted with modern towing appliances and to have all upper deck fitted with seats for first class passengers, and main deck fitted with seats to accommodate second and third class passengers. Two lavatories to be fitted forward of machinery casing.

Powerful steering gear to be provided. Life saving rafts and appliances and one small boat carried on davits above awning to be supplied.

Strong fender to be fitted all round and all upper structure to be kept well inboard. Tenderers are invited to provide their own designs based on the general dimensions and particulars

stated above. The vessel to be fitted out complete in every respect for the purposes required, and to be delivered in Penang Harbor or at Prai Railway Station.

 Twin screws to be protected. 2. Rudder to be extra large, and steering gear very powerful and at the same time arranged to go hard over to hard over quickly.

3. Wood fender to be carried round bow and stern. Rattan or rope fender to be supplied stem and stern.

4. Scantlings to be in accordance with Lloyds or Board of Trade requirements.

5. Accommodation, general style, and type of Fittings to be similar to existing Railway Ferry Boats. 6. Draft not to exceed 7.0 aft and to have forefoot out well away for freedom in turning. 7. Full inventory of equipment to be supplied by

Tenderers. 8. Vessel to be supplied with high Service Fire Pump. 1,000 feet 3" canvas hose in lengths of not more than 100' each, all fitted with Standard brass couplings

after Penang Fire Brigade pattern, and complete

sets of nozzles, &c., &c. Pump to be of best design for supplying four 3/4"

nozzles at high pressure. Sealed tenders endorsed "Tender for Composite Tug Boat and passenger steamer combined" will be received up to noon on 3rd October, 1904, and should be addressed to the Federal Secretary, Kuala Lumpur. The Government does not bind itself to accept

the lowest or any tender. July 14.

Shanghai Municipal Loan of 1904.-Under the authority of Resolutions V. and VI. passed at the Annual Meeting of Ratepayers on the 15th instant, the Council hereby invites applications of debentures to the extent of six hundred and seventy thousand taels (Tls. 670,000). The conditions upon which the debenture certificates will be issued are :-

. The loan will bear interest at the rate of six per centum per annum, payable on the 31st of December and the 30th of June in each year. 2.—Debentures will be redeemable in not less than five years and not more than twenty

years from the 30th of June, 1904, in such amounts, and in such manner, as the Council may from time to time determine. 3. - Applications for the whole of the debentures

or for any number thereof will be received by the undersigned from this date. 4.—The scrip will be issued in amounts of Tls. 100. Tls. 500, and Tls. 1,000 each. Applicants

will please state the amounts in which the debentures they apply for are to be issued. 5. The rate of issue is fixed at par until further notice, and no application below this rate will be entertained.

J. O. P. BLAND,

Secretary.

By Order, Council Room,

Shanghai, 25th Mar, 1904.

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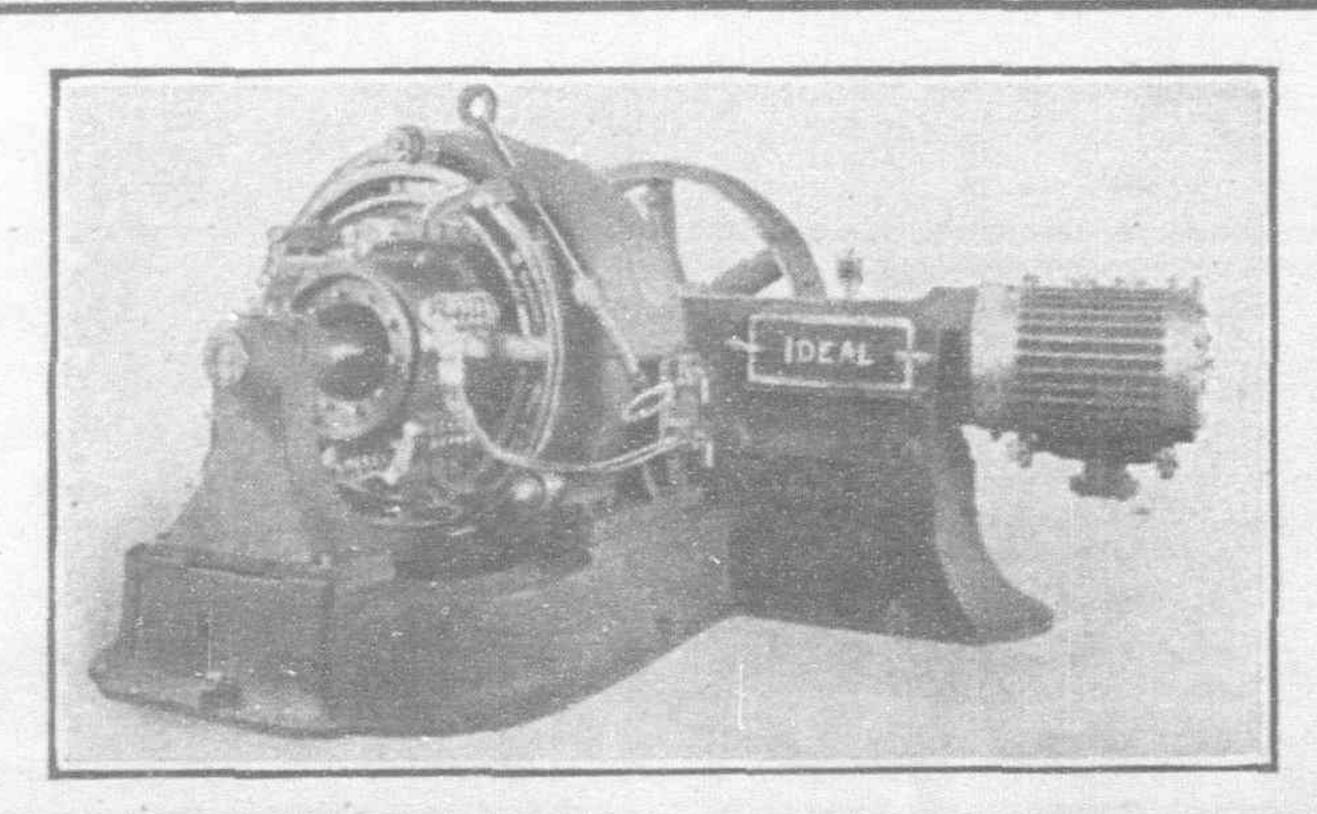
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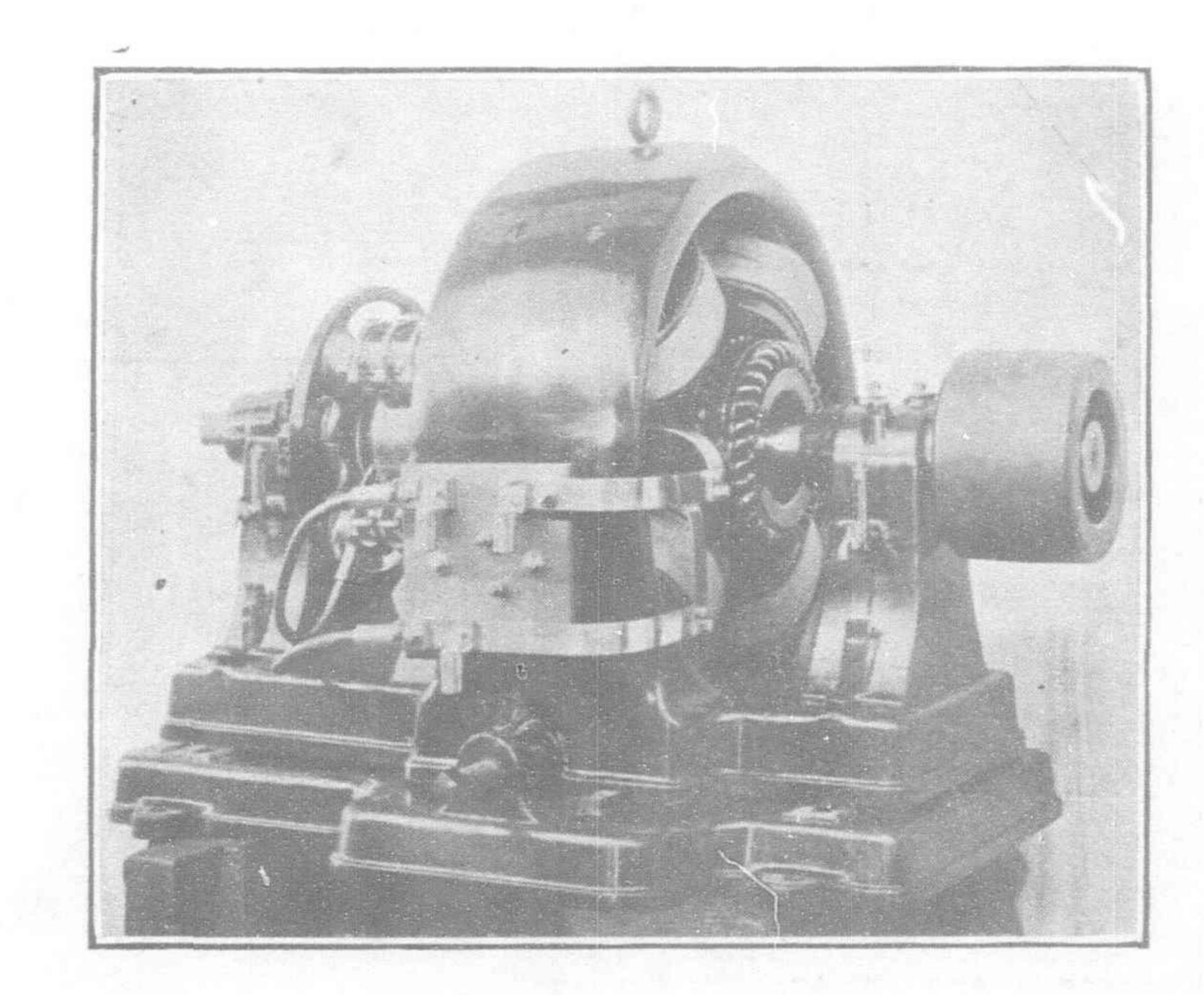
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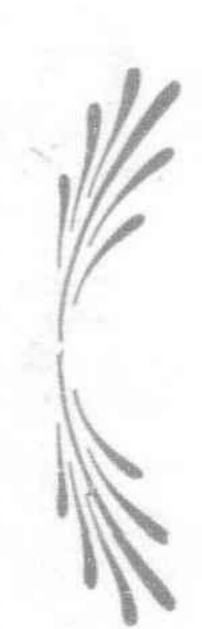


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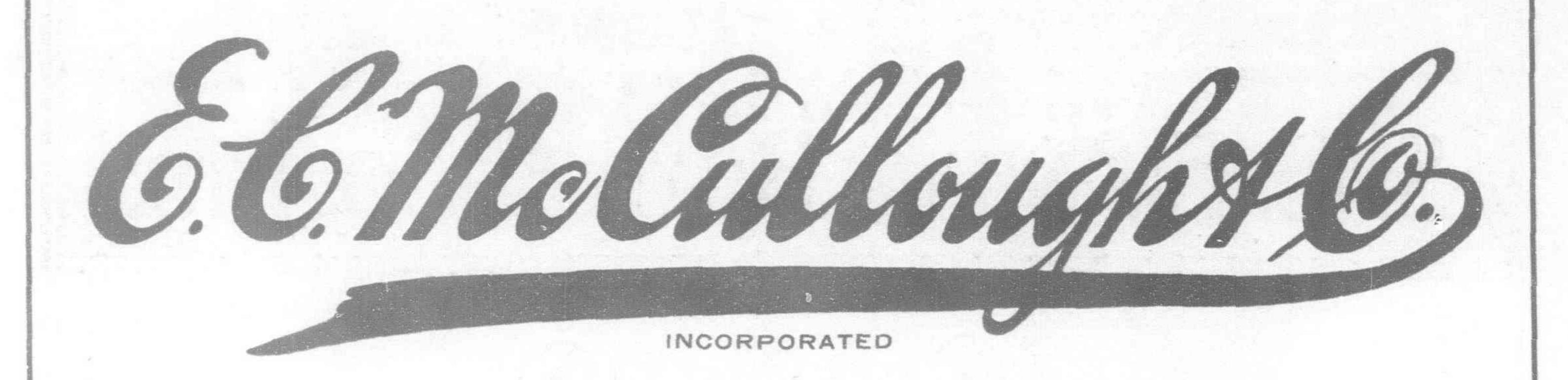
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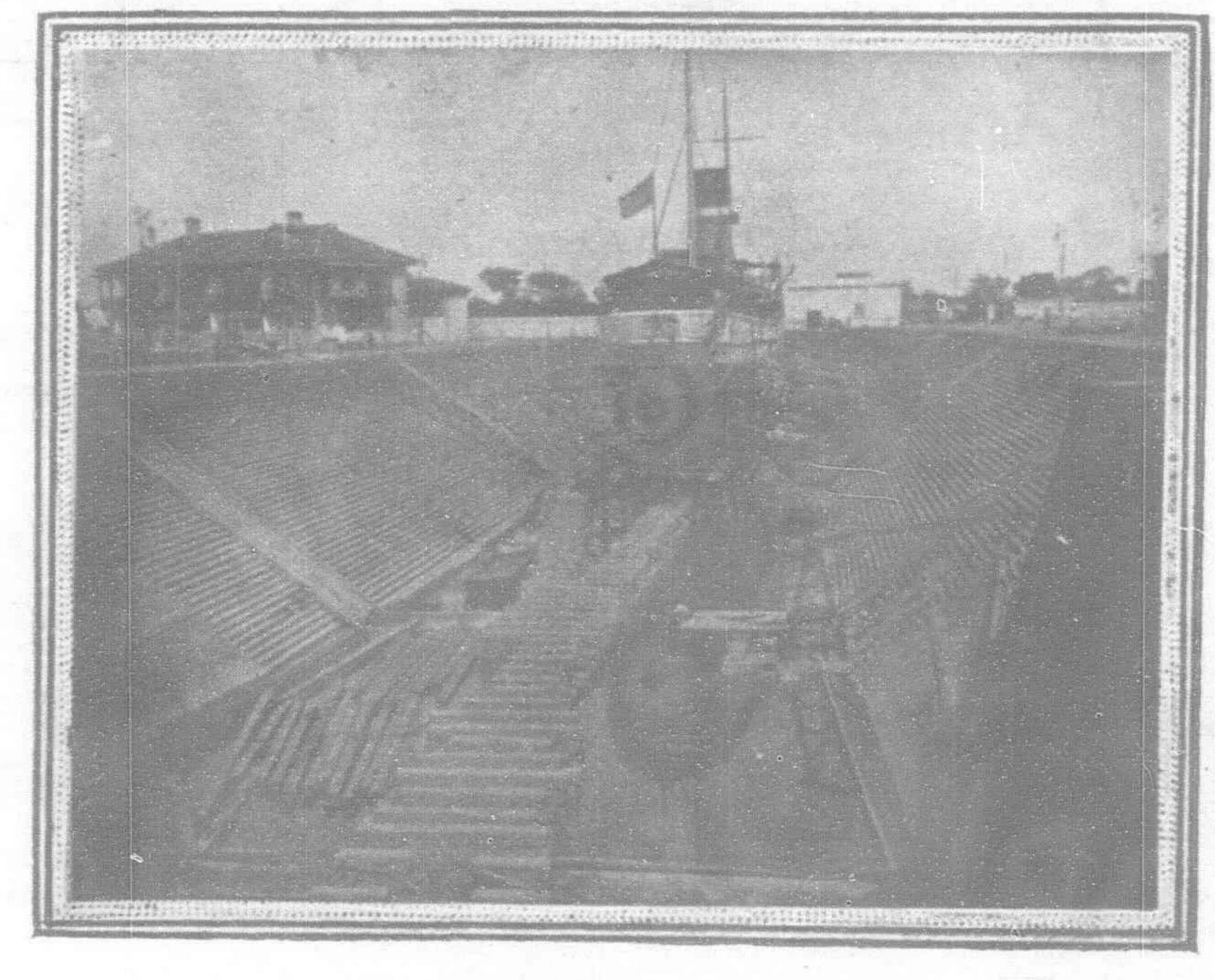
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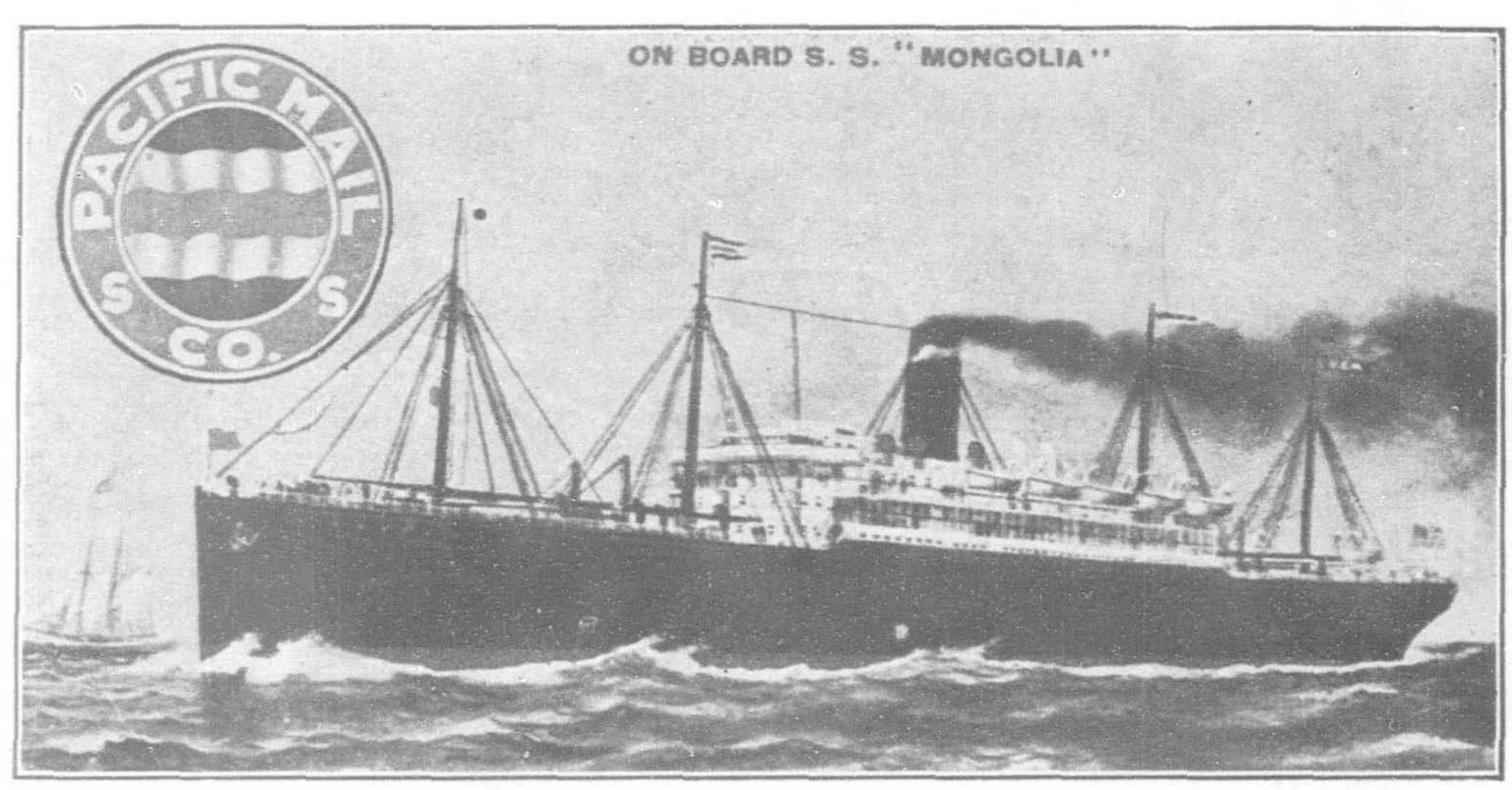
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